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ABSTRACT

The first two parts of a three-part final report on a series of studies that examined the nature, characteristics, and effects of verbal feedback to student reading miscues are contained in this volume. Part I consists of a summary of the nine specific objectives of the research, an overview of the project's methods, and the findings for each of the objectives. The introductory sections in part II contain the project's rationale, a short history of oral reading pedagogy, and information on the nature of teacher verbal feedback to miscues. The largest portion of this section contains comprehensive summaries of three major and several follow-up studies. An extended discussion of the studies' findings and the implications of these results for instruction and future research completes the volume. (JL)

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Final Report

Project No. 9-1289

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Feedback to Oral Reading Miscues

Parts I & II

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Preface

It has been almost five years now since I first envisioned a series of studies into the nature, characteristics, and effects of teacher verbal feedback to pupil reading miscues. In those early days, five years seemed an eternity to plan for. In retrospect I have come to realize that five years is but an instant on a research continuum. While some of the original questions that spawned this project have been answered many more new ones have been raised. There is a great deal that remains to be done. Hopefully, though, the findings from the research to be reported will provide a useful foundation for the studies to follow.

Five groups of people have had a significant impact on the evolution of this research project. Each is deserving of special mention from the outset. To a dedicated group of research associates and colleagues: Sharon O'Neal, Christopher Baker, Lesa Kastler, Kerry Segal, Genevieve Kerr, and John Daly, I wish to express my thanks for their time, creativity and enthusiasm. To the faculty, students and administrators of Temple Independent School District - in particular Marilyn Hoster, Assistant Superintendent - I offer my thanks for their openness and spirit of professionalism in cooperating with this project. To my research associates from The Research and Development Center for Teacher Education Richard Clements, Cherry Kugel, Cynthia Gardner and The Center Director, Dr. Oliver Bown, I wish to express my appreciation for their support and collegiality; to the National Institute of Education. I wish to express my gratitude for the financial support received to carry out this study. The staff at NIE - in particular my project officer, John Chambers - worked with me to solve innumerable logistical problems in bringing this research to a successful conclusion. Finally, I wish to acknowledge a gifted set of researchers and their students at various institutions across the country studying teacher/pupil interactions patterns during classroom reading instruction including Drs. Susanna Pflaum, Jerry Niles, Gerald Duffy, Jerry Harste, and Richard Allington for their many challenging conversations and responses to manuscripts at various points of completion. Each of these individuals has contributed in significant ways to the research literature in this area, I can only hope that the research to be reported will in some significant way extend their pioneering work.

The report is organized into three major sections. Part I (Research Summary) contains a project overview and capsulized report on the major findings of the series of studies that were conducted as part of this research effort. Part II (Project Description) contains a comprehensive summary of each of the studies in the project including an extended discussion of the findings outlined in Part I. Part III (Supporting Documents) contains copies of the various articles and unpublished manuscripts which have been reported on as part of this project.

Each of these has been labeled, for referencing purposes, with a unique technical report identification number.

PART I: RESEARCH SUMMARY

Project Goals

The broad goal of this research project was to advance our understanding of teacher/pupil classroom communication over learning tasks. The task under study was oral reading instruction in primary grades. The principal focus for the research was on the nature characteristics and effects of teacher verbal feedback to pupil miscues. Specific objectives included the following:

1. To conduct an historical review of the literature on oral reading instruction in classroom and clinical settings.
2. To study teacher beliefs, attitudes and practices in oral reading instruction.
3. To conduct an inventory of student beliefs and attitudes toward oral reading instruction.
4. To construct a theoretical framework for understanding and studying the nature and role of teacher verbal feedback to student miscues occurring during instruction.
5. To develop an observation system for recording the salient features of the teacher/pupil verbal interaction patterns surrounding student miscues.
6. To study the characteristics of verbal feedback to student miscues as they relate to teacher background experiences and teachers' theoretical orientations toward reading.

7. To study the characteristics of verbal feedback to miscues as they relate to pupil status variables (i.e., achievement, ethnicity, and sex) and miscue characteristics.
8. To study the associated effects of teacher verbal feedback patterns on pupil reading strategies.
9. To study the long term effects of the context for oral reading instruction - including feedback characteristics - on pupil achievement levels.

Overview of Method

This research project was comprised of a number of smaller studies imbedded in several larger ones. Each of these studies addressed various combinations or aspects of the nine objectives just outlined. The several larger studies focussed on three different subject populations.

The first study was conducted at The University of Texas at Austin. These subjects were preservice (undergraduate) and inservice (graduate) students enrolled at the University randomly paired to form instructional dyads with elementary aged students enrolled in a summer reading program at The Learning Abilities Center. The elementary students read to these tutors orally from basal texts at two difficulty levels. These sessions were videotaped and coded later using the FORMAS (Feedback to Oral Reading Miscue Analysis System) dyadic coding instrument.

The second set of subjects were a group of second grade teachers from two school districts located just outside the city of Austin, Texas. These teachers had been videotaped in their own classrooms working with their high and low reading groups. The videotapes were collected as part of the Instructional Dimensions Study at The Research and Development Center for Teacher Education-U.T. Austin. The oral reading instructional segments on these videotapes were coded using the FORMAS taxonomy. Participating teachers were interviewed as part of Study II.

The third set of subjects were the second grade teachers in three elementary schools in the Temple Independent School District. These teachers audio recorded oral reading instruction with a high and a low group in their own classrooms on a bi-weekly basis for one full semester. These tapes were coded using the FORMAS classroom instrument. Teacher and student interviews were conducted. Standardized reading achievement data on the students in the reading groups were collected over a two-year period.

Research Findings

Objective 1

To conduct an historical review of the literature on oral reading instruction in classroom and clinical settings.

Supporting Documents

Technical Report #1: "Is there a legitimate place for oral reading in the developmental reading program?" Hoffman.

Technical Report #2: "Oral Reading Instruction: A Century of Controversy" Hoffman and Segal.

Findings

1. There is a significant discrepancy between (a) the expressed views on the value of oral reading instruction in the professional literature (by-in-large negative) and (b) the amount (widespread) and type (round-robin) of oral reading instruction going on in classrooms.

2. Certain types of oral reading practice have the apparent potential to contribute significantly to growth in reading ability. Specifically, teacher guided practice can develop (a) reading fluency through focus on the prosodic features of language and on units of language discourse larger than the word and (b) comprehension through the reduced cognitive attention to decoding and the emphasis on the reader's interpretation and communication of the author's intended message.

3. Effective practice in oral reading includes elements such as the following:

   A. The use of text which is rich in language in terms of rhythms, patterns, and quality of expression;

   B. The modeling of appropriate oral reading by the teacher;

   C. The opportunity to rehearse text by students;

D. The opportunity to perform orally in both individual and audience contexts;

E. Sustaining/formative feedback by the teacher to the student's performance;

F. Teacher guided analysis of text - in terms of language usage and author's intended meaning;

G. An emphasis on oral reading which expresses the author's intended meaning.

4. The dominant use of "round-robin" type oral reading in schools today is a result of:

A. The need for an accountability/monitoring system on the part of teachers to check whether students are recognizing words and to insure that all students have been exposed to the content;

B. The stilted and controlled language of the basals which does not lend itself to interpretative or expressive reading;

C. The focus in reading instruction on accurate pronunciation of the word as being the most important variable in learning to read.

Objective 2

To study teacher beliefs, attitudes and practices in oral reading instruction.

Supporting Documents

Technical Report #3: "Teacher beliefs, attitudes and preferred practices in oral reading instruction." Daly and Hoffman

Technical Report #4: "A study of theoretical orientation to reading and its relationship to teacher verbal feedback during reading instruction." Hoffman and Kugel

Technical Report #5: "A descriptive study of the characteristics of miscue focussed verbal interactions between teacher and student during guided oral reading." Hoffman and Clements

Findings

1. Teacher guided oral reading plays a prominent role in instruction at all levels of schooling - in particular at elementary levels.

2. The dominant pattern for guided oral reading instruction is turn-taking (or round-robin) reading within groups.

3. Most teachers view oral reading as valuable to all students and particularly so for the low achiever or slow learner.

4. The chief value of oral reading for the students is seen as helping them to improve their decoding skills.

5. The quality of oral reading is judged primarily in terms of accuracy of reading.

6. Approximately two-thirds of all reading group sessions in secondary grade classrooms involve oral reading instruction. Approximately two-thirds of the time in these sessions is focussed in interaction with the story being read. Approximately two-thirds of this interaction time is devoted to actual oral reading.

7. The average length of time spent in a typical reading group session is longer for the high achieving as opposed to the low achieving student.

8. The error rate for students in low achieving second grade groups typically is about double that of students in high achieving groups.

Objective 3

To conduct an inventory of student beliefs and attitudes toward oral reading instruction.

Supporting Documents

Technical Report #6: "Students' beliefs and attitudes about oral reading instruction." Hoffman, Kastler and Nash

Findings

1. Even by the beginning of second grade, students have begun to develop identifiable beliefs and attitudes toward oral reading.

2. These developing beliefs and attitudes are different for the higher and lower achieving student.

3. The following points were identified as differentiating higher and lower achieving students' beliefs and attitudes:

   A. The better the reader the greater the enjoyment of oral reading regardless of the social or preference context.

   B. The better the reader the greater the desire for the teacher to assume a low profile in helping with difficult words.

   C. The poorer the reader the less the enjoyment and the greater the desire for teacher involvement.

4. The variable "perceived ability in oral reading" relates (i.e., predicts) reading achievement much better than does "perceived ability in silent reading."

5. For extremely poor readers, oral reading is viewed as a stressful and anxiety producing part of the classroom instructional routine.

Objective 4

To construct a theoretical framework for understanding and studying the nature and role of teacher verbal feedback to student miscues occurring during instruction.

Supporting Documents

Technical Report #7: "On providing feedback to student miscues." Hoffman.

Findings

1. Teacher verbal feedback to miscues can best be understood as an on line/interactive decision-making process.

2. A teacher's decision=making matrix with respect to verbal feedback to miscues consist of specific criteria related to three dimensions:

   A. Selection: Which miscues would be responded to?
   B. Timing: When will miscues be responded to?
   C. Form: How will miscues be responded to?

Objective 5

To develop an observation system for recording the salient features of the teacher/pupil verbal interaction patterns surrounding student miscues.

Supporting Documents

Technical Report #8: "Characterizing teacher feedback to oral reading miscues." Hoffman and Baker

Technical Report #9: "FORMAS - Feedback to Oral Reading Miscues Analysis System training manual." Hoffman, Gardner, and Clements

Findings

1. The FORMAS taxonomy targets and operationally defines teacher/pupil interactive behaviors surrounding miscues across the following areas:

   I. Miscue (The observed response in relation to the expected response)

- A. Type: Insertions, omissions, hesitations, substitutions, mispronunciations, calls for help, repetitions
- B. Meaning Change: Little and substantial
- C. Grapho-Phonic Similarity: High and low

II. Reaction (student's first behavior following the miscue)

- A. Type: Repeated attempt, continuation, immediate self correction, pause, call for help, no opportunity

III. Teacher Verbal Feedback (First teacher behavior in response to a miscue)

- A. Type: No verbal, terminal (giving a text word or calling on another student) and sustaining (providing opportunity or helping the student to identify the text word)
- B. Form of Sustaining: Attending (Noncue focusing), grapho-phonic and contextual
- C. Timing of Teacher Feedback: Immediate (less than 3 seconds) and delayed (more than 3 seconds)
- D. Point of Feedback: Before the next sentence break, at the next sentence break, or following the next sentence break

IV. Other Student Verbal Feedback

A. Type: None, solicited and unsolicited

B. Timing: Immediate (less than 3 seconds) and delayed (more than 3 seconds)

C. Form: Attending (Noncur focusing), Grapho-Phonic and Contextual

V. Resolution

A. Type: Teacher identified text word, student identified text word, another student identified text word, or miscue left unidentified

2. The training manual (and accompanying audiotape) provides instruction in the use of the FORMAS taxonomy and specific procedures for estimating levels of inter-coder reliability.

Objective 6

To study the characteristics of verbal feedback to student miscues as they relate to teacher background experience and teachers' theoretical orientations toward reading.

Supporting Documents

Technical Report #4: "A study of theoretical orientation to reading and its relationship to teacher verbal feedback during reading instruction." Hoffman and Kugel.

Technical Report #10: "A comparison of inservice and preservice teacher verbal feedback to student miscues across two difficulty levels of text." Hoffman, O'Neal and Baker

Findings

1. Overall, preservice and inservice teachers tend to be more similar than they are different in their response patterns to pupil miscues in dyadic settings.

2. On the average, the type of feedback offered to students - when offered - was almost equally divided between terminal (i.e., giving the word) and sustaining (i.e., helping the student) patterns. Inservice teachers were more likely than preservice teacher to resort to terminal feedback.

3. On the average, the form of sustaining feedback was fairly evenly divided for both preservice and inservice teachers among grapho-phonic, contextual, and attending prompts.

4. The only dimension of feedback to miscues found to be significantly related to teacher conceptions of reading was timing. Teachers with more whole language orientation tended to wait (i.e., delay) their responses to high meaning change miscues more so than teachers with a linear skills orientation.

5. The selection of terminal vs. sustaining feedback was explained by teachers more often in terms of reader abilities or behaviors and management concerns than as a function of conceptions about reading.

6. With respect to sustaining feedback the choice between grapho-phonic and contextual prompts was explained quite often in terms of teacher conceptions of reading.

Objective 7

To study the characteristics of verbal feedback to miscues as they relate to pupil status variables (i.e., achievement, ethnicity, and sex) and miscue characteristics.

Supporting Documents

Technical Report #10: "A comparison of inservice and preservice teachers verbal feedback to student miscues across two difficulty levels of text." Hoffman, O'Neal, and Baker.

Technical Report #5: "A descriptive study of the characteristics of miscue focused verbal interactions between teacher and student during guided oral reading." Hoffman and Clements.

Technical Report #11: "Guided oral reading and miscue focused verbal feedback in second grade classrooms." Hoffman, O'Neal, Kastler, Segal, Clements, and Nash.

Findings

1. The types of miscues, their frequency, and their characteristics (in terms of degree of meaning change and grapho-phonic similarity to text words as well as reaction patterns) are significantly different for high and low ability readers.

2. The patterns of verbal feedback offered by teachers to miscues are significantly different as a function of miscue type, characteristics and reaction patterns.

   A. High meaning change miscues are responded to more often and more quickly than low meaning change miscues.

   B. Certain types of miscues (i.e., hesitations, mispronunciations, and substitutions) are more likely to be responded to than other types of miscues (i.e., insertions, omissions, and repetitions)

3. The patterns of verbal feedback offered by teachers differ as a function of the ability level in the group on which the student is reading.

   A. The miscues of students in high achieving groups are more likely to be ignored than those of students in low reading groups.

   B. Teachers are more likely to delay their responses (when offered) to students in high achieving as opposed to students in low achieving groups.

   C. Students in low achieving groups are more likely to be given terminal feedback than those in the high achieving groups.

4. No consistent differences or patterns were found in teacher verbal feedback related to pupil sex, ethnicity, or dialect features of miscues.

Objective 8

To study the associated effects of teacher verbal feedback patterns on pupil reading strategies.

Related Documents

Technical Report #10: "A comparison of inservice and preservice teacher verbal feedback to student miscues across two difficulty levels of text." Hoffman, Baker, and O'Neal.

Technical Report #5: "A descriptive study of the characteristics of miscues focused on verbal interactions between teacher and student during guided oral reading." Hoffman and Clements

Technical Report #11: "Guided oral reading and miscue focused verbal feedback in second grade classrooms." Hoffman, O'Neal, Kastler, Segal, Clements, and Nash.

Technical Report #12: "The effects of differentiated patterns of verbal feedback to miscues on word identification strategies and success." Hoffman, O'Neal and Clements.

Findings

1. Certain teacher verbal feedback patterns show clear and strong predictive relationships independent of error rate and achievement levels to pupil reading miscue and reaction patterns:

A. There is a positive relationship between hesitation miscues and terminal feedback.

B. There is a positive relationship between delaying the point of feedback and continuation and immediate self-correction pupil behaviors following miscues.

2. Teacher/pupil interaction patterns appear to operate as distinct sub-routines depending on the reading ability of the group the teacher is working with.

A. The reader in a high achieving group is one who makes few miscues. The miscues that are made are mainly substitutes which affect meaning only slightly and do not resemble the grapho-phonic characteristics of the text word. The reader is most likely to continue reading in the text without interruption from the teacher and without bothering to self-correct later on. The next most common pattern - likely associated with more "difficult" words - is for the good reader to mispronounce and then immediately self-correct or make repeated attempts at the word without teacher interruptions until the word is identified by the student.

B. The reader in a low achieving group is one who makes many miscues. The miscues are primarily substitutions which do resemble the grapho-phonic features of the text word and also substantially affect text meaning. In such instances the teacher is likely to come in almost immediately or after the student has paused briefly to give the correct word. The second most common pattern - likely associated with more difficult words - is for the reader in the low achieving group to hesitate and all but wait for assistance which the teacher quickly obliges by giving the text word.

3. The small scale experimental studies conducted as part of this project suggest the following:

A. Variations in patterns of verbal feedback have a significant differential effect on high and low achieving students' success in identifying the same text word the next time it is encountered. Delayed contextual prompts seem to be the most effective type of prompt overall (with immediate context prompts being the worst). The effect for delaying feedback - whatever the form - was found to be significant for successfully identifying the target word on the next encounter with both high and low achieving student.

B. Grapho-phonic prompts were found to take longer and lead less often to student identification of the text word than contextual prompts.

Objective 9

To study the long term effects of the context for oral reading instruction - including feedback characteristics - on pupil achievement levels.

Related Documents

Technical Report #11: "Guided oral reading and miscue focused verbal feedback in second grade classrooms." Hoffman, O'Neal, Kastler, Segel, Clements, and Nash.

Findings

1. Pupil error rate in assigned basal materials is negatively related to growth in reading achievement. In other words, the more difficult the material the student practices in - relative to his or her ability - the less the growth in reading achievement.

2. Teachers' use of terminal feedback to pupil miscues is negatively related to growth in reading achievement. In other words, the more often teachers employ terminal feedback the less will be the growth in reading achievement.

PART II: PROJECT DESCRIPTION

Introduction

To admit that one studies oral reading instruction among a group of reading educators is to invite a few guffaws, some yawns, and a lot of leave-taking behavior. At a time when most reading researchers are busy investigating such heavy issues as comprehension, discourse characteristics, models of the reading process, and stages of reading acquisition the topic of oral reading instruction may seem insignificant indeed. Yet bring these same set of topics before an audience of teachers and one finds them most receptive and responsive to the issue(s) of oral reading instruction. The differences between researchers and practitioners in terms of interest in the topic are still small in comparison to the differences between the groups in terms of belief about the value(s) of oral reading instruction. This discrepancy between interests, beliefs and value judgments of practitioners on the one hand and researchers on the other is certainly reason enough to study oral reading instruction. But there is more. Oral reading instruction and the teacher/pupil interactions surrounding miscues are one specific manifestation (and a relatively constrained one) of classroom communication over learning tasks. To the degree that research can contribute to our understanding of the nature and effects of teacher/pupil interactive behaviors during oral reading instruction we are in a position to grow in our understanding of general principles of classroom communication and their relationship to pupil learning.

Rationale

The broad goal of the research project to be reported on was to advance our understanding of teacher/pupil classroom communication over learning tasks. The task under study was oral reading instruction in primary grades. Specifically, the focus was on the nature, characteristics and effects of teacher verbal feedback to student miscues. The choice of verbal feedback as the principal focal point within oral reading instruction was based on a consideration of two major factors. First, there is a long history of research which indicates that teacher feedback can significantly influence the quality and quantity of pupil learning (Kulhavy, 1978). Indeed, Bloom (1976) found academic feedback to be more strongly and consistently related to achievement than any other single teacher behavior. The second factor influencing the choice of teacher feedback as being the focal point for this research was the growing body of theoretical and applied work in miscue analysis (Goodman, 1969; Goodman and Burke, 1973; Goodman and Goodman, 1980). This work suggests not only a theoretical rationale for how and why pupil miscues (i.e., observed oral reading responses which differ from the expected ones) are a "window" into the reading process but also gave practical techniques for analyzing and interpreting miscue patterns.

The simple theoretical principal (or "hunch") that motivated the current project was that if miscues are the teacher's window into the developing reader's understanding of the reading process then the teacher's verbal feedback is the student's window into a proficient reader.

Would that it were so simple. What the teacher really sees evidence for in miscues is part reading process and part instructional history. What the student sees evidence for in feedback to miscues is part proficient reading, part conceptions of reading instruction. How *do* teachers moderate or vary their feedback patterns as a function of the qualitative information in student miscues? How *do* students accommodate the qualitative information is teacher feedback into their own reading behavior? While many aspects of oral reading instruction were investigated as part of this project these two questions were the most crucial ones being addressed again and again.

Oral Reading Instruction - From History to the Here and Now

Oral reading has been a significant part of reading pedagogy in America at least since the 1780's. The method of oral reading used during the late eighteenth and early nineteenth century centered on the recitation lesson. In the typical recitation lesson the teacher presented a portion of text to the students - often by reading it to them. This presentation was followed by teacher guided analysis of the text in terms of content and appropriate expression. Time was then given over to the students for studying or rehearsing the text. Finally, the student(s) took turns reciting portions or all of the text. Although there were sporadic indictments of the oral recitation lesson during the years of 1780 to 1890, it wasn't until the 1890-1900 period and continuing through the 1920's that there arose a serious reaction to this method. The charges made against oral reading were often couched in terms of arguments for practice in silent reading. Among the points being made were the following:

1. Education should focus on meaning not mechanics (an Herbartian notion).
2. Reading is the "Getting or giving of thought" (Huey, 1908) not simply the naming of word.
3. Silent reading - not oral reading - is important in "the affairs of adult life" (Gray, 1917).
4. Research demonstrates the superiority of rate and comprehension in silent overt oral reading.
5. Group administered silent reading survey tests were developed during this period and used as the primary means of evaluating reading instruction.
6. Oral reading was not as suited to the goals of reading to learn as silent reading.
7. The oral reading recitation method did not lend itself to students doing broad or extensive reading.

8. The "experts" in the emerging field of reading education were identified as in favor of more silent over oral reading.

The shift to silent reading took hold and gained momentum during the early 1900's. It appears, though, that silent reading did not replace or displace oral reading but rather served to change its function and format. Oral reading was used by teachers as a means of checking up on students (i.e., an accountability system) following silent reading of text. Students were called on at random to reread portions of text that had been first read silently. This shift in method accompanied the growth and refinement of the basal approach in terms of vocabulary control and a stress on the accuracy of word identification in learning to read.

Broad based surveys of classroom instructional practices (e.g., Austin and Morrison, 1967; Artly, 1972; Howlett & Weintraub, 1980) indicate that this purpose and use of oral reading continues to this day. There is no research evidence from these studies to either support or refute the value of this practice in terms of its effects on reading achievement. The only clear line of research with respect to the effects of oral reading instruction comes from clinical settings. This research suggests that intensive oral methods - similar in many ways to the recitation type lessons of long ago - are a positive force in the development of reading proficiency.

Our review of the literature and our own survey of practices has led us to the following conclusions regarding oral reading instruction.

First, classroom teachers responsible for reading instruction have a strong belief in the value of oral reading for all students - and in particular the poorer ones.

Second, teacher guided oral reading is a common part of primary reading instruction.

A. The dominant format for practice is turn taking (at random) around the reading group.

B. Our best estimate is that about

- 2/3 of the reading group sessions involve some oral reading practice
- 2/3 of the time in these sessions is devoted to interaction with a story
- 2/3 of the interaction time is in students reading orally.

C. The error rate in practice materials for students in low achieving groups is about twice that of students in high achieving groups.

Third, the dominant use of "round-robin" type oral reading in schools today is a result of:

A. The need for an accountability/monitoring system on the part of teachers to check whether students are recognizing words and to insure that all students have been exposed to the content;

B. The stilted and controlled language of the basals which does not lend itself to interpretative or expressive reading;

C. The focus in reading instruction on the accurate pronunciation of the word as being the most important variable in learning to read.

Fourth, the placement of low achieving groups in high error rate materials is a function not of teacher decisions regarding what's in the best interest of the child but of:

A. Grouping and management concerns

B. The lock-step nature of the basal program

Fifth, clinical studies indicate that guided oral reading practice has the apparent potential to contribute significantly to growth in reading ability. Specifically, teacher guided practice can develop (a) reading fluency through focus on the prosodic features of language and on units of language discourse larger than the word and (b) comprehension through the reduced cognitive attention to decoding and the emphasis on the reader's interpretation and communication of the author's intended message.

Sixth, effective practice in oral reading in clinical type settings includes elements such as the following:

A. The use of text which is rich in language in terms of rhythms, patterns, and quality of expression;

B. The modeling of appropriate oral reading by the teacher;

C. The opportunity to rehearse text by students;

D. The opportunity to perform orally in both individual and audience contexts;

E. Sustaining/formative feedback by the teacher to the student's performance;

F. Teacher guided analysis of text - in terms of language usage and author's intended meaning;

G. An emphasis on oral reading which expresses the author's intended meaning;

H. High standards for pupil performance before moving on to new text.

This enumeration should not be interpreted to mean that there is a single effective oral reading method, but that there are likely many effective formats which may stress one or another of these features depending on the specific instructional objective(s) being addressed.

The Nature of Teacher Verbal Feedback to Miscues

Teacher verbal feedback during oral reading instruction is viewed as an on-line interactive decision-making process. Whether in a one-to-one tutorial type setting or in a reading group the task for the teacher during oral reading instruction is that of (1) monitoring pupil performance and (2) responding to pupil performance. While the teacher can respond to accurate reading the focus in this research was on responses to inaccurate reading. While the teacher can respond to inaccurate reading in both verbal and non-verbal ways, the focus in this research was on verbal responses. While the teacher can respond to "inaccurate" reading at many levels of language (e.g., intonation expression) the focus on this research was on words and the associated miscues.

The verbal feedback behavior of teachers to miscues is conceptualized in terms of a decision-making matrix that relates the nature of the stimulus (miscue) to the range of possible response options open to the teacher. These response options are viewed in terms of the following dimensions:

(1) Selection - The teacher has some criteria for which (all or some portion) of the miscues will be responded to. The criteria may include data related to such factors as: miscue characters, student strengths and weaknesses, lesson objectives, target word characteristics and so on.

(2) Timing - The teacher, in those instances where an overt response is opted for, must choose a point to initiate the response. The response may be immediate or delayed in some way.

(3) Form - The teacher has a number of choices in terms of actual response patterns. The teacher may choose to give (i.e., supply) the text word to the student or call on another student to identify the word for the student. Following Brophy and Good (1977) we label this terminal feedback since its effect is to end the student's interaction with the problem of identifying the word. Another choice for the teacher is to help or at least allow the student the opportunity to identify the text word. The teacher can simply call the student's attention to the fact that an error was made. The teacher can focus the student's level of attention on either (1) graphonic (i.e., code) levels or (2) context (syntactic and semantic levels).

The resulting matrix for decision-making is potentially very complex for the teacher. For this reason we must keep in mind that all of this must happen very quickly such that the teacher very likely operates from a few relatively simple "routines" rather than approaching each feedback decision for its unique characteristics.

Characterizing Teacher Verbal Feedback to Miscues

A great deal of effort was expended in this project developing an observation system that would validly represent the miscue focused verbal interactions which occurred during guided oral reading. Fortunately, we had both all the work on miscue analysis techniques plus our own conceptualization of feedback dimensions to guide us in this effort. The first form of the taxonomy (Hoffman, Baker, and O'Neal, 1979, 1980) was adequate for clinical settings but too cumbersome and too detailed for classroom use (see figure 1). The final version of the taxonomy identified five major clusters of behavior which are coded across each student miscue (see figure 2).

I. The Miscue

The meaning change and grapho-phonic characteristics of the miscues coded in Cluster I are drawn out of the miscue analysis tradition. We added the typology breakdown because it helped us deal with hesitation behaviors on the part of students which often cued teacher feedback responses and also because it seemed like too important of information to simply ignore.

II Reaction

We had more trouble labeling this cluster than we did in conceptualizing it. The term refers to the students next behavior following the initial miscue. In some cases it seems to reflect conscious strategy utilization on the part of students. What it does provide for sure is a more complete picture of what the teacher has to deal with beyond the initial miscue.

III. Verbal Feedback

Four major clusters of teacher/pupil interactive behaviors

I. Miscue
   A. Type: insertions; omissions; hesitations; substitutions; misprounuciations; calls for help; and repetitions.
   B. Meaning change: high and low.
   C. Syntactic acceptability: high; some; and low.
   D. Grapho-phonic similarity: high and low.

II. Reaction (student's immediate behavior following miscue)
   A. Type: repeated attempt; continuation; immediate self-correction; pause; call for help; and no opportunity.

III. Teacher Verbal Feedback
   A. Type: no verbal; terminal (giving the text word); and sustaining (helping student to identify text word).
   B. Form of sustaining: attending (noncue focusing); simple grapho-phonic; simple context; complex grapho-phonic (i.e., grapho-phonic followed by context); and, complex context (i.e., context followed by grapho-phonic).
   C. Timing of teacher feedback: immediate (0 to 3 seconds); delayed (more than 3 seconds).
   D. Point of teacher feedback: before the next sentence break; at the next sentence break; or after the next sentence break.

IV. Resolution: teacher identified text word; student identified text word; or miscue left unidentified.

Fig. 1

CLUSTER

I. Miscue (The observed response in relation to the expected response)
   - A. Type: Insertions, omissions, hesitations, substitutions, mispronunciations, calls for help, repetitions
   - B. Meaning Change: Little and substantial
   - C. Grapho-phonic Similarity: High and low

II. Reaction (student's first behavior following the miscue)
   - A. Type: Repeated attempt, continuation, immediate self-correction, pause, call for help, no opportunity

III. Teacher Verbal Feedback (First teacher behavior in response to a miscue)
   - A. Type: No verbal, terminal (giving a text word or calling on another student) and sustaining (providing opportunity or helping the student to identify the text word)
   - B. Form of Sustaining: Attending (non-cue focusing), Grapho-phonic and contextual
   - C. Timing of Teacher Feedback: Immediate (less than 3 seconds) and delayed (more than 3 seconds)
   - D. Point of Feedback: Before the next sentence break, at the next sentence break, or following the next sentence break

IV. Other Student Verbal Feedback
   - A. Type: None, solicited and unsolicited
   - B. Timing: Immediate (Less than 3 secs) and delayed (more than 3 secs)
   - C. Form: Attending (non-cue focusing), grapho-phonic and contextual

V. Resolution
   - A. Type: Teacher identified text word, student identified text word, another student identified text word, or miscue left unidentified

Fig. 2

The breakdown of elements in this cluster corresponds directly to the conceptualization of teacher verbal feedback offered earlier. The timing dimension, it may be noted, is covered both in terms of elapsed time and point of interruption.

IV. Student Verbal Feedback

This cluster was included to account for input from other members of a group either invited or spontaneous.

V. Resolution

Here again, we had more trouble in labeling the cluster than we did in conceptualizing it. One of our goals in including this cluster was to monitor student self-correcting behavior which was delayed beyond the "immediate self-correction" behavior identified in the reaction cluster.

In addition to the miscue level analysis, the research version of the FORMAS (Feedback to Oral Reading Miscue Analysis System) taxonomy we also monitored turn taking procedures, reading rate, and the amount of accurate reading.

STUDY I

The first major study utilizing a version of the FORMAS taxonomy focused on dyadic interaction patterns during oral reading instruction. The goal was to explore patterns of feedback as they related to an hypothesized teacher decision-making framework.

METHOD

Subjects

The subjects for this study were teacher pupil dyads. Thirty-four elementary pupils were selected at random from students enrolled in a summer reading program at The University of Texas at Austin. The actual grade placement levels of the students were distributed evenly among grades one through five. The teachers were eighteen experienced classroom teachers enrolled in a graduate reading methods class and sixteen undergraduate education majors (inexperienced teachers) enrolled in their first reading methods course. Pupils were randomly assigned to teachers to form instructional dyads. Teachers and pupils had no instructional contact of familiarity prior to participation in this study. This was done so as to control the possibility that prior knowledge of student needs might influence response patterns by teachers.

Procedures

Each student's approximate instructional reading level (92-98% Word Accuracy) was determined during a screening phase using an informal reading inventory developed from passages found in each of the basal readers of The New Basic Readers (Scott, Foresman, and Company, 1964). Reading achievement levels, as reflected on the informal reading inventory (IRI), were generally distributed evenly above and below grade placement.

Selected portions of basal readers in the New Basic Reading Series that had not been included in the informal reading inventory, were used as reading materials in this study. Each pupil read aloud to a teacher for approximately ten minutes from one section of text at an instructional level and for an additional ten minutes from a second piece of text at the next higher level within the series. The difficulty sequence was counter-balanced between subjects (i.e., easy first/hard second and hard first/easy second). All sessions were videotaped from concealed audiovisual equipment. Prior to commencing the oral reading sessions, identical sets of directions were given. Experienced and preservice teachers were informed that the purpose of the study was to record and examine interactions between teachers and students during oral reading instruction and that they should feel free to assist the student in as natural a manner as possible. The pupils were told they would read two texts aloud with a teacher present to guide them.

Coding

Videotapes were coded using the FORMAS-dyadic taxonomy (Hoffman & Baker, 1980). Coders were trained to use FORMAS to classify audiovisual recordings of the student/teacher interactions during oral reading instruction. Four major clusters of teacher/pupil interactive behaviors were monitored and analyzed for this study (the FORMAS cluster related to other student feedback was not included in this study given the dyadic setting for the interaction). Interrater reliability during coding was monitored with random checks for coder agreement. The coefficient of interrater agreement for nominal scores K, was the measure used to estimate the proportion of joining judgments of reading miscues after chance agreement was excluded (Hoffman, Gardner & Clements, 1980). For each dyad the reliability coefficients for agreed miscues ranged between .83 and 1.00. Interrater reliability coefficients for each category of behavior across the agreed upon miscues ranged between .79 and .96. Only single word miscues were coded and analyzed in this study. Multiple miscues (similar to Weber's (1970) "scrambles") involving two or more continguous text words were simply tallied.

RESULTS AND DISCUSSION

A total of 1,837 miscue interactions were coded. The average accuracy of oral reading for students in the easy material was about 85% and in the difficult material about 81%. Although these error rates (15% and 19% respectively) are high in comparison to the criteria used with the screening IRI, two important differences must be kept in mind. First, in the experimental setting hesitation and repetitions were always counted as miscues. This was not always the case in the screening IRI. Second, miscues which were self-corrected in the experimental setting were counted. They were not counted in the screening IRI. Multiple miscues accounted for about 9% of the total. These miscues were not included in the analyses to be reported.

Selection: Which miscues did teachers respond to?

Teachers made some form of overt verbal response to only 37% of the single word miscues made by students. This figure roughly replicates the findings of Allington (1978) in his study of classroom oral reading instruction. Further analyses of our data revealed that teachers were more likely ($p < .05$) to respond to miscues made in difficult rather than easy material (40% versus 34%). Inservice teachers were also more inclined ($p < .05$) to respond than preservice teachers (40% versus 34%).

Teachers were more likely ($p < .05$) to respond to miscues which affected meaning substantially (44% were responded to) than those which resulted in minimal meaning change (only 19% were responded to). Teachers seemed also to be sensitive to the ways in which students were reacting to their own miscues in determining whether or not to respond. Teachers were most likely to respond to repeated attempts (55% were responded to) and pauses after miscues (62% were responded to). Teachers were least likely to respond when the students continued reading in the text after making a miscue (only 15% were responded to). It seems reasonable to conclude from these data that there are at least three factors directly related to criteria for selection of which miscues to respond to: (1) the degree of meaning change involved; (2) the density of miscues; and (3) the strategy the student exhibits immediately following the miscue.

Timing: When did teachers respond?

The timing of teacher response was monitored in two ways: First, in terms of elapsed time between the occurrence of the miscue and the initiation of feedback; and second, in terms of the point in the text relative to the miscue at which the feedback was first offered. In general it can be said that teachers interrupt early and fast. Verbal responses were offered immediately (i.e., within 0-3 seconds), almost 75% of the time and before the student had progressed very far beyond the miscue in the text (e.g., 83% before the next sentence break).

In comparing the timing of responses between easy and hard materials it was found that point of response tended to be earlier in the more difficult material, although elapsed time was greater. This phenomenon can be explained in part by the associated decrease in continuations by the students when moving from easy to difficult material (35% to 33%), and the increase in repeated attempts (16% to 18%) and pauses (7% to 8%). When the feedback is offered, then, it is directly related to the degree of text difficulty in relation to pupil ability. Where the feedback is offered is influenced by the student's strategy following the miscue.

Form: What kind of feedback was offered?

When teachers did respond overtly to student miscues, their responses were divided fairly evenly (19% versus 18%) between terminal feedback (initially giving the student the text word) and sustaining feedback (attempting to have the student identify the text word). The data also revealed that inservice teachers resorted more often to terminal feedback than preservice teachers and that both groups used significantly more terminal feedback when students were reading in the more difficult material. See Table 1.

In terms of breakdown of teacher sustaining feedback behaviors, it was found that inservice teachers relied on significant attending feedback more often than did preservice teachers (38% as opposed to 22%). Significant attending feedback provides the student with an opportunity to respond and is non-cue focused. Examples would include such statements as: "try again" or "keep working at it." Both groups tended to rely less on significant attending feedback when students were reading in the more difficult materials.

Both groups of teachers were fairly evenly split between their reliance on grapho-phonic and contextual prompts. As a

TABLE 1

Percentage of Teacher Prompts as a Function of Sustaining Feedback by Category

MATERIAL TYPE	Teachers	Total Number of Miscues	Attending Without Prompt	Simple Graphic Phonic	Complex Graphic Phonic	Simple Context	Complex Context
EASY	Inservice	67	34%	31%	5%	25%	5%
	Preservice	68	28%	40%	1%	27%	1%
	Total	135	31%	36%	3%	26%	4%
HARD	Inservice	83	43%	24%	0%	22%	11%
	Preservice	77	14%	39%	0%	43%	4%
	Total	160	29%	31%	0%	32%	8%
ALL	Total	295	30%	33%	2%	29%	6%

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group, teachers became more contextually oriented in their prompts as students read in the more difficult material. While, as noted earlier, teachers were more likely to respond to miscues which substantially affected text meaning, there was no apparent relationship between the level of meaning change and the form of sustaining feedback, nor was there a discernible relationship between the form of sustaining feedback and the degree of grapho-phonic similarity between the miscue and the text word. In other words, a student who generated a miscue which substantially affected text meaning was no more likely to get a context prompt than a grapho-phonic prompt. Conversely, a student who generated a miscue which had low grapho-phonic similarity to the text word was no more likely to get a grapho-phonic prompt than a context prompt. It was surprising - particularly with respect to miscues which substantially affected meaning - that teachers would apparently use this information to determine whether or not they should prompt and then not use the information in determining the kind of prompt they would offer.

Also, teachers rarely initiated a prompt at one level and completed the prompt at another. For example, in only 6% of the cases in which a prompt was offered did teachers combine both grapho-phonic and contextual cues. Teachers were more likely to make repeated prompts at the same level even when faced with unsuccessful responses by the student.

An analysis of the amount of time spent on a prompt from initiation by the teacher to resumed reading by the pupil revealed no significant differences between the groups of teachers. There was, however, a slight tendency toward shorter interruptions in the more difficult material. A significant difference ($p < .05$) was found for the amount of time away from the task of reading relative to the form of the sustaining feedback with grapho-phonic prompts taking much longer than the others.

Of all the single word miscues made by students not given overt feedback, 45% were ultimately identified by the students themselves. Of those single word miscues responded to and receiving sustaining feedback, 41% were ultimately identified by the teacher and 54% by the students. Some forms of prompts were more associated with student identification of the text word than were others. Simple context prompts, for example, led to student identification 67% of the time, while simple grapho-phonic prompts led to student identification only 51% of the time.

SUMMARY

This study was designed in order to observe and describe the characteristics of verbal feedback behaviors used by teachers during guided oral reading. Basic relationships between pupil behavior and teacher behavior were explored.

In summary, the major findings of this study can be categorized by characterizing teachers' verbal feedback in terms of selection, timing and form. On the whole, both experienced and inexperienced teachers were remarkably similar in their choices of response patterns. With regard to selection, teachers were more likely to respond to miscues made in difficult material. As well, all teachers appeared to be sensative to meaning change in choosing in which miscues they would respond to (although they did not appear to use this information in determining the form of their verbal feedback). With regard to the timing dimension of teacher feedback, teachers more often responded to miscues quickly rather than delaying their point of intervention. Finally, in the area of form, terminal feedback appeared to be a strategy teachers turned to more often in difficult text. Attending prompts (i.e., sustaining feedback with no cue offered), simple grapho-phonic prompts and simple contextual prompts were equally divided. The patterns of sustaining feedback seemed to indicate that contextually oriented prompts took less time and were more likely to lead to student identification of miscues than grapho-phonically oriented prompts.

The generalizability of the findings from this study are limited by the dyadic context and the unfamiliar teacher/pupil pairings in which the interactions occurred. But as Wilmot (1975) has pointed out, the basic components of a communicative system may be more easily studied initially in a dyadic setting. The results of this study form a useful and necessary basis for expanded studies of teacher/pupil interactions during oral reading in the classroom.

STUDY II

The purpose of this study was to describe the characteristics and effects of the verbal feedback offered by teachers to student miscues occurring during group oral reading instruction. Analyses were also made relative to the ways in which teachers vary feedback between students in different ability groups. The goals of this study were threefold:

(1) To characterize teacher verbal feedback to oral reading miscues in terms of distributive patterns of reader behavior.

(2) To determine the ways in which teachers may or may not consistently vary feedback between students in different ability groups.

(3) To infer toward possible relationships between teacher feedback patterns and student performance characteristics.

METHODS AND PROCEDURES

The data for this study comes from videotaped reading groups. These reading groups were videotaped as a part of a larger study designed to allow an indepth examination of reading instruction in the field. There were a total of nine teachers in the original study. Each of these teachers were videotaped on four separate occasions while guiding their reading groups. One of the teachers did not have a sufficient amount of guided oral

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reading to be included in this portion of the study. The remaining eight teachers all had one or more videotaped reading group sessions with guided oral reading.

Subjects

The unit of analysis for this study was the reading group. Two teachers had one reading group each, four teachers had two reading groups, and two teachers had three reading groups, making a total of 16 reading groups. While each teacher, as is normally the case, divided their students into reading groups according to the reading ability of the individual student, students had been previously assigned to classes based to some degree on their reading ability. This made it possible for a low reading group in one class to be made up of better readers than a high reading group in another class. For this reason reading groups were classified as high or low ability on the basis of the average of the individual's pre/post reading achievement test. The 16 reading groups were divided into two groups of eight reading groups with the highest achieving groups being in Group 1 and the low achieving groups being in Group 2. The fact that teachers were in some instances unevenly represented across groups, creates certain problems for analysis which will be discussed later.

Coding

The videotapes were coded using the FORMAS taxonomy (Hoffman & Baker, 1981). Following this system, each miscue is examined across five major clusters of behavior: (I) miscue characteristics, (II) reaction, (III) teacher verbal feedback, (IV) other student verbal feedback, and (V) miscue resolution (see Figure 2 for breakdown of each cluster). Coders were trained and levels of agreement monitored using procedures established by Hoffman, Gardner and Clements (1980).

Data Analysis

There are many analyses possible given the complexities of FORMAS. The analyses used for this paper were carried out in three phases. In each phase the high versus low reading groups were included as a factor. The dependent variable used in each of the analyses described below is miscue rate for each category. This was calculated for each group by dividing the number of miscues made in a category by the total number of words read by that group and then multiplying by 100.

Phase I. In Phase I the major categories in each FORMAS cluster were analyzed separately (Cluster IV is not included in this paper since few instances of other student feedback were observed). In Cluster I a two-way between-within analysis of variance was run with group factor. In Cluster II a similar analysis was run for reaction categories. Repetition miscues were omitted from the analysis because they tend to artificially inflate the category of immediate self-correction. In Cluster III feedback categories replaced reaction categories and in Cluster V resolution categories were analyzed.

Immediateself-corrections were omitted from the latter two analyses since they offered no opportunity for teacher feedback.

Phase II. In this phase the subcategories of Clusters I and III were further analyzed. For Cluster I this implied two analyses. In the first there were three factors: (1) reading ability, (2) the miscue categories (insertions, omissions, substitutions), and (3) degree of meaning change. The second analysis also had three factors: (1) reading ability, (2) miscue categories (substitutions and mispronunciations), and (3) grapho-phonic similarity.

There were three analyses in this phase for Cluster III. First, sustaining and terminal feedback were broken down for timing of feedback. Second, sustaining and terminal feedback were broken down in terms of the point of feedback. The third analysis looked only at sustaining feedback whiich were broken down into the form of the feedback. As before, reading ability was included each time as a factor.

Phase III. In this phase two different clusters were included in the same analysis in the order that they occurred in time. This means that the analysis discussed above for Clusters II, III, and V were rerun, only this time including miscue categories and subcategories as factors in the analysis. Clusters III and V were then reanalyzed including reaction categories as a factor with repetitions omitted from the analysis and Cluster V was reanalyzed including feedback and its subcategories as factors with repetition and self-correction omitted from the analysis.

Limitations. There are two problems inherent in this analysis. It has already been mentioned that there is a confound between the ability grouping used and teachers. The seriousness of this problem should not be underestimated, but it was felt that the alternative which was to make teacher/class the unit of analysis would not improve the interpretability of the findings since some of the teachers did have groups which spanned the high to low ability boundary. The results of this analysis which concern reading ability must be interpreted with some caution.

The second problem of these analyses has to do with the dependent variable. The miscue rate measures used is in reality a proportion. Proportions are not constant interval variables nor are they normally distributed, therefore, they do not meet the required assumptions for an analysis of variance. While there are transformations appropriate for proportion data (e.g., arc sine), the consequence of not transforming is a loss of power in most instances. It will be seen shortly that any loss in power is not crucial to the hypothesis tested. Further, these types of transformations are difficult to use in this case because of the occurrence of zeroes in the data set. In all of the transformations a zero must be made into an arbitrarily large negative number. If they were done, it would be very difficult to interpret analyses which contained these proportions.

Results and Discussion

Of the nine teachers videotaped in the original sample, teacher guided oral reading was found to be present with sixteen different reading groups, or 63% of the total number observed. While the total number of reading sessions in which oral reading occurred was equal for the high and low groups, the total amount of time spent in actual group instruction was significantly different for the high (331 minutes) and the low (270 minutes). Within these reading groups, approximately 68% of the time for both the high and low readers was spent interacting directly with the story. The low groups spent about 66% of their time reading aloud, 15% discussing the story, and 11% receiving verbal feedback to miscues. The high groups spent 52% of their time reading, 37% discussing the stories and 9% receiving verbal feedback to miscues.

Approximately 1,000 miscues were observed and coded. There was a statistically significant difference in reading accuracy between ability groups ($p < .001$) with students in the low reading groups demonstrating a higher miscue rate (11 miscues per 100 words) than the students in the high reading groups (5 miscues per 100 words). Reading rate in words per minute was also significantly greater in the high reading groups. The overall correlation between group miscue rate and reading achievement was $r = -.75$.

These early findings suggest first that oral reading is indeed a significant part of reading instruction at the second grade level. Second, that while poor readers spend a greater portion of their reading group time reading aloud, they have less time to begin with, are reading slower, and making many more errors than the good readers. Third, that teacher verbal feedback miscues occupies a significant portion of the time spent in guided oral reading.

The findings from the analyses of the miscue focused interaction will be reported in four major sections which correspond directly to four of the five clusters delineated in the FORMAS taxonomy: (1) miscue characteristics, (2) student reactions, (3) teacher verbal feedback, and (4) miscue resolution. There were so few instances of "other student feedback" to miscues that the data from this cluster was eliminated from consideration.

Miscue Characteristics

There was a statistically significant difference among the miscue types $F(5,70) = 23,5204$, $p < .01$ across all students. This indicates that at least six of the miscue categories (i.e., insertions, omissions, substitutions, mispronunciations, hesitations, and repetitions) have different characteristic rates of occurrence. There were so few instances of "call for help" miscues that this category identified in the FORMAS taxonomy type interaction $F(5,70) = 11.8138$, $p < .01$, indicating that good and poor groups differed with respect to the rate of certain kinds of miscues. The rate for substitution miscues was approximately equal for the two ability groups. The readers in the poor groups were more likely than those in the good groups to make hesitation and mispronunciation type miscues while the readers in the good groups were more likely than those in the poor to make repetitions, omissions, and insertions.

Substitutions, mispronunciations, omissions, and insertions were further analyzed for the degree to which the miscues affected the meaning of the text being read. There was an interaction between ability groups and meaning change $F(1,14) = 20.96$, $p < .01$, with high readers found to be making more low meaning change miscues and low readers making more high meaning change miscues. This difference replicates findings from numerous other studies which have compared high and low ability readers using miscue analysis techniques.

Substitutions and mispronunciations were analyzed for the degree of grapho-phonic similarity between expected and observed responses. There was a significant three-way interaction for groups by miscue type by grapho-phonic similarity $F(1,14) = 10.97$, $p < .01$. This can best be understood by examining proportions presented in Table 2. Considering substitutions first, it can be seen that the low group tended to make a greater proportion of high grapho-phonically similar substitutions than the high group. Again, this finding parallels what we have known

Table 2

Grapho-Phonic Similarity Patterns for the Miscues of the High and Low Group Readers

		GRAPHO-PHONIC SIMILARITY	
		High Similarity	Low Similarity
High Group	Substitutions (1.83)*	.60	.40
	Mispronunciations (.87)*	.83	.17
Low Group	Substitutions (3.82)*	.73	.27
	Mispronunciations (1.54)*	.60	.40

*Mean number of miscues per 100 words of text read.

from earlier miscue studies. When mispronunciations are considered, however, an interesting paradox comes to light. A very high proportion of the high group's mispronunciations were grapho-phonically similar mispronunciations. One explanation for the behavior of the high group is that while they generally focus on meaning in reading, they do have good decoding skills. On those occasions where they are unable to quickly retrieve a semantically appropriate response and are thereby forced to rely on their decoding skills, they do so quite well. The behavior of the low group is explained in part as a decoding weakness and in part as an artifact of coding. That is, as these students encounter very difficult words, their limited decoding skills don't get them far enough into the word to earn a high grapho-phonic similarity score (i.e., the reader must produce at least two of the three parts of the word to earh this high similarity rating). Poor readers are attending only to the first part of the word when they mispronounce, thus earning only a low similarity score.

Miscue Reactions

To review, the miscue reaction cluster specifies the reader's first behavior immediately following the miscue. There are six categories of reactions: continuation, repeated attempt, pause, self-correction, call for help, and no opportunity to react. So few instances of calls for help were observed that thesee were eliminated from analysis. Self-corrections of repetitions (a mandatory coding in the reaction cluster) were removed because they tend to artifically inflate the immediate self-correction category.

There was a statistically significant main effect for student reaction type $F(4,56) = 10.0651, p < .01$. That is, the student reaction types are not equally distributed. Specifically, continuation and no opportunity are the most frequent reaction categories, with self-corrections next, and repeated attempts and pause being the least frequent categories. There was an interaction between ability groups and reaction type $F(4,56) = 15.0662, p < .01$, indicating that the pattern of student reactions is different for low and high reading groups (Figure 3). For the high group continuations appeared most often (47% of the time) with self-corrections (24% of the time) the next most frequent. For the low group, no opportunity (52% of the time) was by far the most common reaction. What this means is that over one-half the time the low readers were interrupted by the teacher before they were able to demonstrate any of the other types of reactions.

Figure 4 presents the data related to typical reaction patterns to omission, insertion, and substitution miscues as a function of the degree of meaning change. In examining these figures, the reader should keep in mind that the self-correction category in the reaction cluster only refers to immediate self-corrections. Delayed self-corrections where the student

Figure 3

Typical Student Reactions to Their Own Miscues for Good Readers and Poor Readers as Defined by Reading Achievement Scores

HIGH GROUP

Insertion (9.36%) ——> Continue (86.5%)
- - - -> Repeated Attempt (10%)

Omission (17.09%) ——> Continue (69.2%)
- - - -> Self Correct (21.6%)

Substitution (41.51%) ——> Continue (53.9%)
- - - -> Self Correct (16.45%), Repeated Attempt (15.2%), No Oppor. (13.7%)

Mispronounce (19.27%) ——> Self Correct (60.1%)
- - - -> Repeated Attempt (20.3%), No Oppor. (11.1%)

Hesitate (12.77%) ——> No Oppor. (44.8%), Self Correct (29.3%)
- - - -> Continue (12.9%), Pause (11.64%)

LOW GROUP

Insertion (2.02%) ——> Continue (46.2%), No Oppor. (32.9%)
- - - -> Repeated Attempt (13.9%)

Omission (3.69%) ——> Continue (43.6%), No Oppor. (31.80%)
- - - -> Self Correct (19.38%)

Substitution (41.05%) ——> No Oppor. (40.39%), Continue (25.6%)
- - - -> Self Correct (13.6%), Pause (12.04%), Repeat (8.31%)

Mispronounce (16.18%) ——> No Oppor. (35.6%), Self Correct (35.6%)
- - - -> Repeated Attempt (19.02%), Continue (9.79%)

Hesitate (37.06%) ——> No Oppor. (73.6%)
- - - -> Pause (15.0%)

——> Primary Reactions
- - - -> Secondary Reactions

Figure 4

Typical Reactions to High and Low Meaning Change Miscue Separately for Good and Poor Readers

HIGH READERS

Insertion LOW	→	CONTINUE (95.2%)
(.3375)*	⇢	
Insertion HIGH	→	CONTINUE (78.2%)
(.06875)	⇢	Repeated Attempt (10.9%), Self-Correct (10.9%)
Omission LOW	→	CONTINUE (75.9%)
(.61250)	⇢	Self-Correct (17.1%)
Omission HIGH	→	SELF-CORRECT (44.0%), CONTINUE (33.6%)
(.16750)	⇢	No Opportunity (14.2%)
Substitution LOW	→	CONTINUE (67.3%)
(1.1312)	⇢	Self-Correct (11.4%), Repeat (10.2%), No Opportunity (9.9%)
Substitution HIGH	→	CONTINUE (32.1%), NO OPPORTUNITY (25.6%), REPEAT (24.6%)
(.80125)	⇢	Self-Correct (17.6%)

LOW READERS

Insertion LOW	→	CONTINUE (58.7%)
(.07875)	⇢	No Opportunity (23.8%), Repeat (17.5%)
Insertion HIGH	→	NO OPPORTUNITY (60.8%)
(.09875)	⇢	Continue (25.3%), Repeat (13.9%)
Omission LOW	→	CONTINUE (48.9%)
(.27875)	⇢	No Opportunity (35.9%)
Omission HIGH	→	SELF-CORRECT (46.9%), REPEAT (41.3%)
(.07875)	⇢	Continue (12.7%)
Substition LOW	→	NO OPPORTUNITY (44.3%), CONTINUE (37.8%)
(1.17125)	⇢	Self-Correct (13.6%)
Substitution HIGH	→	NO OPPORTUNITY (57.02%)
(2.6875)	⇢	Continue (20,9%), Self-Correct (13.9%)

*Mean Number of Miscues/100 Words Read

ultimately identifies a miscue without interruption by the teacher will be discussed in a later section dealing with the resolution of miscues. The data in this reaction cluster seem to suggest that at least the poor readers "tend" toward a similar pattern as good readers in continuing to read following miscues which affect text meaning only slightly. Unlike the good readers, however, it is very unlikely for the poor readers to continue on after a miscue which substantially affects text meaning. Whether this is a strategy they don't have, or one which the teachers will not allow them o exercise is unclear.

Teacher Verbal Feedback

In analyzing the data relative to teacher feedback, repetition miscues and all other miscues immediately self-corrected were eliminated from consideration since in these instances there was no clear opportunity for teacher feedback. Terminal feedback was the most common type of feedback found (50%), followed by no verbal feedback (35%) and then sustaining (14%). There was, however, a statistically significant interaction ($p < .01$) between high and low ability groups. For the high group, the most common type of feedback was no verbal feedback (73%) followed by terminal (16%), then sustaining (11%). For the low group, the most common form of feedback was terminal (64%) followed by no verbal feedback (20%), then sustaining (16%).

Figure 5 presents the type of feedback offered by teachers broken down by miscue type for the high and low ability readers. The most dramatic difference is with respect to substitution miscues where the dominant pattern for good readers is no verbal feedback (75%) while the for the poor readers the dominant pattern is terminal feedback (57%).

The type of teacher feedback was then examined as a function of meaning change with insertion, omission, and substitution type miscues. A statistically significant effect ($p < .01$) was found for feedback type as a function of meaning change (Figure 6). High meaning change miscues were more likely to be responded to than low meaning change miscues in both groups. The poor readers' miscues, whether high or low meaning change, are still more likely to be given an overt response by the teacher. In addition, poor readers are still more likely to receive a terminal response over sustaining kinds of feedback.

The analysis of form of sustaining feedback did not yield any statistically significant findings. We suspect that the small number of instances of sustaining feedback overall is the primary reason for not reading certain levels of statistical significance. The proportions for the three forms of sustaining feedback (attending, grapho-phonic, and contextual) presented in Figure 7 certaily suggest that the poorer readers are receiving more grapho-phonic cues and less attending and contextual cues than the better readers. It will take a larger data set to

Figure 5

Typical Teacher Feedback to Pupil Miscues for Good and Poor Readers Separately

HIGH READERS

Insertions → NO FEEDBACK (99.6%)
(.12879)* ⇢

Omissions → NO FEEDBACK (87.3%)
(.2033) ⇢

Substitutions → NO FEEDBACK (74.2%)
(.5313) ⇢ Terminal (13.6%), Sustaining (12.2%)

Mispronunciations → NO FEEDBACK (58.1%)
(.1163) ⇢ Terminal (26.9%), Sustaining (15.1%)

Hesitations → TERMINAL (42.6%), NO FEEDBACK (38.4%)
(.1388) ⇢ Sustaining (18.9%)

LOW READERS

Insertions → NO FEEDBACK (55.1%)
(.0658) ⇢ Terminal (38.0%)

Omissions → NO FEEDBACK (55.4%)
(.0971) ⇢ Sustaining (38.2%)

Substitutions → TERMINAL (56.6%)
(1.155) ⇢ No Feedback (27.5%), Sustaining (15.9%)

Mispronunciations → TERMINAL (61.7%)
(.3529) ⇢ No Feedback (22.2%), Sustaining (15.9%)

Hesitations → TERMINAL (74.2%)
(1.1198) ⇢ Sustaining (17.4%)

*Mean Number of Miscues/100 Words Read

High Readers

Meaning Change		Teacher Feedback
Low Meaning Change Miscues (.61)*	⟶ ------→	NVF (85%) Sustaining (8%)
High Meaning Change Miscues (.23)*	⟶ ------→	NVF (70%) Terminal (17%)

Low Readers

Meaning Change		Teacher Feedback
Low Meaning Change Miscues (.45)*	⟶ ------→	NVF (49%) Terminal (40%)
High Meaning Change Miscues (.92)*	⟶ ------→	Terminal (63%) NVF (23%)

⟶ Primary Reaction

------→ Secondary Reaction

* Mean number of miscues per 100 words read.

Figure 6.

	FORM OF SUSTAINING		
	Attending	Grapho-Phonic	Context
High Ability .0829*	.46	.30	.24
Low Ability .2393*	.35	.52	.13

* Miscues per 100 words read

Figure 7

provide the necessary support before drawing any firm conclusions, however.

Overt verbal feedback, which includes both terminal and sustaining types, was offered to students in less than three seconds after the occurrence of a miscue over 85% of the time. There was a statistically significant interaction ($p < .01$) between ability groups and timing with the low group more likely to receive feedback in less than three seconds than the high group. The timing of feedback was also examined relative to the degree of meaning change with insertion, omission, and substitution type miscues. A statistically significant three-way interaction ($p < .01$) was found which indicated that with the high group there was greater likelihood for feedback to be delayed with low meaning change miscues while with the low group no differences in timing for meaning change were in evidence (Figure 8).

The point at which feedback was offered was also found to be significantly related to the ability group. Overall, 94% of the overt verbal feedback was offered before the next sentence break. The pattern for the high group was quite distinct from that ofthe low (Figure 9). The instances of delayed feedback for the high group were generally associated with omission and insertion type miscues. An examination of point of feedback relative to meaning change revealed a statistically significant three-way interaction for reading groups similar to that found for timing (Figure 10).

	TIMING	
High Readers	Less than 3 seconds	Greater than 3 seconds
Little Meaning Change (.1304)*	.93	.07
Substantial Meaning Change (.0725)*	.84	.16
Low Readers		
Little Meaning Change (.2333)*	.97	.03
Substantial Meaning Change (.6296)*	.95	.05

* Miscues per 100 words read.

Figure 8

	POINT OF FEEDBACK		
	Before the Next Sentence Break	At the Next Sentence Break	Following the Next Sentence Break
High Ability (.138)*	.81	.13	.06
Low Ability (1.09)*	.96	.04	.00

* Miscues per 100 words read.

Figure 9

	POINT OF FEEDBACK		
	Before the Next Sentence Break	At the Next Sentence Break	Following the Next Sentence Break
High Ability			
Little Meaning Change (.0787)*	.60	.30	.10
Substantial Meaning Change (.0716)*	.83	.17	.00
Low Ability			
Little Meaning Change (.2316)*	.95	.05	.00
Substantial Meaning Change (.6295)*	.93	.07	.00

* Miscues per 100 words read.

Figure 10

Wait time was apparently varied by teachers as a function of ability for the high group, but not so for the low level readers.

Miscue Resolution

The final area of analysis focused on the resolution of the miscue, i.e., whether it was identified by the student who made the miscue, the teacher, another student, or simply left unidentified. Figure 11 presents the data for resolution of miscues by miscue type. Again, there was a statistically significant interaction for resolution by ability group. The dominant resolution patterns for the high ability group were student identification or leaving the miscue unidentified. The dominant pattern for the poor readers, with the exception of mispronunciations, wea teacher identification of miscues.

Resolution was next examined as a function of the form of sustaining feedback. A statistically significant main effect was found with no interaction by ability. Attending feedback led to student identification of the miscue 85% of the time, contextual feedback almost 80% of the time, but grapho-phonic feedback only 68% of the time. Approximately 25% of the miscues given grapho-phonic feedback were ultimately identified by the teacher.

The resolution of miscues was finally examined by the degree of meaning change associated with the miscue. Here, there was a statistically significant interaction ($p < .01$) by ability group (Figure 12). The dominant patterns for the high group showed little evidence for direct teacher involvement in resolving the

Figure 11

Typical Resolutions to Pupil Miscues for Good and Poor Readers Separately

HIGH READERS

Insertions	⟶	UNIDENTIFIED (78.2%)
(.10625)*	- - ->	Student (21.8%)
Omissions	⟶	UNIDENTIFIED (55.2%)
(.20156)	- - ->	Student (35.0%)
Substitutions	⟶	UNIDENTIFIED (42.7%), STUDENT (42.2%)
(.47375)	- - ->	Teacher (11.7%)
Mispronunciations	⟶	STUDENT (75.5%)
(.21844)	- - ->	Teacher (12.4%)
Hesitations	⟶	STUDENT (48.3%), TEACHER (40.1%)
(.11062)	- - ->	Other (11.6%)

LOW READERS

Insertions	⟶	TEACHER (38.0%), UNIDENTIFIED (34.2%), STUDENT (27.8%)
(.049375)	- - ->	
Omissions	⟶	UNIDENTIFIED (39.6%), TEACHER (30.9%), STUDENT (29.5%)
(.09)	- - ->	
Substitutions	⟶	TEACHER (52.7%)
(1.0041)	- - ->	Student (28.15%), Unidentified (17.6%)
Mispronunciations	⟶	STUDENT (50.6%), TEACHER (41.9%)
(.40094)	- - ->	
Hesitations	⟶	TEACHER (75.0%)
(.91156)	- - ->	Student (21.7%)

*Mean Number of Miscues/100 Words Read

High Group

Meaning Change		Resolution
Little Meaning Change	——→	Unidentified (70%)
(.60)*	------→	Student Identified (20%)
Substantial Meaning Change	——→	Student Identified (38%)
(.25)*	------→	Unidentified (36%)

Low Group

Meaning Change		Resolution
Little Meaning Change	——→	Unidentified (45%)
(.42)*	------→	Teacher Identified (37%)
Substantial Meaning Change	——→	Teacher Identified (62%)
(.75)*	------→	Student Identified (24%)

——→ Dominant pattern

------→ Secondary pattern

* Mean number of miscues per 100 words read.

Figure 12.

fact that these three variable have shown up again and again in research on teaching as strong positive correlates of effective teaching, points to the serious nature of the problem facing the poor reader.

Further, there appears to be nothing redeeming for the poor reader in the quality of the interaction during guided oral reading. That is, there appear to be quite distinct patterns in teacher/pupil interactive behaviors over miscues during guided oral reading as a function of ability. Creating a compostie based on the data from this study we see the good reader as one who makes mainly substitution type miscues which affect meaning only slightly and do not resemble the grapho-phonic characteristics of the text word. The good reader is most likely to continue reading in the text without interruption from the teacher and without bothering to self-correct later on. With more difficult words, the good reader is likely to mispronounce and then immediately self-correct of make repeated attempts at the word, again, without interruption from the teacher until the word is successfully identified.

The composite for the poor reader is one of a reader who also makes primarily substitution miscues, but these do resemble the grapho-phonic features of the text word and also substantially affect text meaning. In such instances the teacher is likely to come in almost immediately or after the student has paused briefly to give the correct word. With even more difficult words the poor reader is likely to hesitate and all but wait for assistance which the teacher quickly obliges by giving the text word.

Teachers and students have apparently worked out a system which is mutually facilitative in that the behaviors of one reinforce the behaviors of the other. There is nothing in what is done by the teacher to encourage the poor reader to begin to look like the good, nor is there anything in the good reader's behavior which encourages the teacher to behave as she or he does with the poor.

Theoretical Orientation to Reading

A follow-up study was organized utilizing some of the data from Study II and some data collected as part of an earlier pilot study. The focus for the follow-up study was on the relationship between teacher conception of (or orientation toward) reading instruction and their verbal feedback patterns. This study was designed primarily to relate the actual performance of teachers during reading instruction to their conception or theoretical orientation toward reading. Two instruments were used to assess teachers' conception and theoretical orientation toward reading. The first of these was the Deford (1978) Theoretical Orientation to Reading Profile (TORP), which contains items reflecting accepted practices and beliefs about reading. The TORP was designed within the framework proposed by Harste and Burke (1978). Research with this instrument indicates that it is a one-factor test measuring instruction in reading characterized by a continuum from isolation to integration of language (Deford, 1978). Research findings also indicate a fairly high agreement between teacher profiles generated by this instrument and ratings made by independent observers of the selected teachers during actual instruction.

The second instrument has been developed as part of the Conceptions of Reading Project at the Institute for Research on Teaching. The purpose of this instrument is to characterize teacher beliefs about reading in terms of standard instructional models (i.e., basal text, linear skills, natural language, interest-based and integrated curriculum models). Research with the "Propositions About Reading Instruction Inventory" has led the authors to conclude that it is an efficient and reliable tool for assessing teacher beliefs about reading (Duffy and Metheny, 1979). These researchers have found that teachers seem to consistently group themselves into two or more general categories: a "content-centered" conception (which includes both the basal text and the linear skills models) and a more "pupil-centered" conception (which includes interest-based, natural language, and integrated curriculum models). They have also concluded that, to the degree teachers do make distinctions among belief systems, they tend to distinguish more between the basal text and linear skills conceptions than between the more humanistic, "pupil-centered" conception.

Research Hypotheses

Based on a careful examination of the two instruments under a study as well as a general review of basic psycholinguistic principles of reading instruction, it was hypothesized that during oral reading instruction, teachers with a higher meaning orientation on the TORP and the whole language subscale of the Propositions Inventory should:

1. ignore more student miscues which result in little meaning change than teachers who have a skills or phonics orientation;
2. wait longer to respond to miscues which change meaning than teachers who have a skills or phonics orientation, thus providing the student with an opportunity to self-correct his/her own miscues;
3. respond to student miscues with contextual clues as opposed to focusing student attention on the grapho-phonic level of the text word.

Methods and Procedures

Instruments

TORP. The TORP consists of 28 items reflecting belief-systems felt to be operating during reading instruction. Items are responded to on a scale of one to five, with lower ratings indicating more agreement with the statement. The total scores calculated for each respondent are felt by the author to be a general indicator of the respondent's theoretical orientation to reading. Scores in the lower (0-65) indicate a phonics orientation, in the middle range (65-100) a skills orientation, and in the high range (100-14) an orientation toward whole language.

PRI. The PRI consists of 45 items reflecting five conceptions of reading: basal text, linear skills, interest-based, natural language, and integrated curricululum. Respondents indicate strength of agreement or disagreement on a five-point scale. The nine items reflecting the five conceptions listed above are totaled separately, resulting in five "subscale" scores for each respondent; lower scores indicate more agreement with the conception of reading reflected by the subscale.

Procedures. The subjects for this study were 35 experienced second and third grade school teachers whose group oral reading instruction had been either audio or video recorded in their actual classrooms. The reading groups were composed of four to eight students, with a broad range of ability levels represented. The tapes were coded using the FORMAS taxonomy. Coders were trained experts in the FORMAS system; reliability between the coders was checked periodically using procedures established by Hoffman, Gardner and Clements (1980) and found to be in excess of .80 levels of agreement on all major categories coded.

After the tapes had been coded, the participating teachers were individually administered the TORP and PRI instruments. Nine of the second grade teachers and five of the third grade teachers were invited to the research center for individual interviews. During these interviews the teachers reviewed and commented on their taped interactions in the reading group with the researchers.

Results

Table 3 shows the means and standard deviations for the scores on the TORP and five cluster scores for the PRI. In addition, correlations among the scores are presented. As shown in the table, there was a significant positive relationship between scores on the TORP and the linear skills conception on the PRI. There was a significant negative relationship between the scores on the TORP and the natural language conception on the PRI. These results are as expected since higher scores on the TORP represent an orientation toward a whole language conception, while higher scores on the PRI subscales represent disagreement with that subscale. Thus, the positive correlation between the TORP and the PRI linear skills conception is interpreted as follows: teachers who agree with a natural language orientation (high TORP scores) disagree with a linear skills approach, (high PRI linear skills scores). In the same manner, the negative correlation obtained indicates that teachers who have a whole language approach to reading as measured by high scores on the TORP and to agree with (i.e., have lower scores on) the natural language conception of the PRI. Conversely, lower TORP scores, which indicate a phonics orientation, are associated with

Table 3

Correlations among the TORP and PRI scores

		PRI				
		BASAL	LINEAR SKILLS	INTEREST-BASED	NATURAL LANGUAGE	INTEGRATED CURRICULUM
	TORP	.17	.49**	-.11	-.47**	-.06
MEANS$^+$	74.3	18.5	18.7	23.9	24.7	19.6
STANDARD DEVIATIONS	11.2	4.7	3.8	4.1	3.9	3.7

** $p < .01$ N = 35 df = 33

$^+$ These values are expressed as percentages.

disagreement to the items reflective of a natural language orientation on the PRI.

As described previously, there were three hypotheses of interest in the current study. These were that teachers with a higher meaning orientation on the TORP and whole language subscale of the PRI should:

(1) ignore more student miscues which result in little meaning change than teachers who have a skills or phonics orientation;

(2) wait longer to respond to miscues which change meaning than teachers who have a skills or phonics orientation, thus providing the student with an opportunity to self-correct his/her own miscues; and

(3) respond to student miscues with contextual clues as opposed to focusing student attention on the grapho-phonic level of the text word.

In order to examine the first question, a percentage of the number of times no feedback was given to miscues with low meaning change was calculated for each teacher (No feedback/LMC). Similarly, the measure of interest for question two was the percentage of times the teacher waited longer than three seconds to respond to miscues with high change in meaning (Wait/HMC). Finally, the number of times the teacher gave contextual cues to miscues, relative to all instances of sustaining feedback, was calculated (Context/SF). In all these measures, the number of miscues which the student immediately self-corrected was subtracted from the denominator since in these cases the teachers had no opportunity to give feedback. These measures of interest were correlated with the scores from the TORP and PRI; the results are presented in Table 4. It should be kept in mind that the actual frequencies upon which these percentages are based may be relatively small. For example, teachers offered sustaining feedback to miscues on an infrequent basis. When this type of feedback is further classified by form (i.e., attending, grapho-phonic, or context) the numbers become reduced even further.

As can be seen in Table 4, the only teacher feedback variable which was significantly associated with teacher beliefs was the tendency to wait to give feedback to miscues with high meaning change. This variable was positively correlated with scores on the PRI linear skills component, and negatively correlated with the PRI natural language and integrated curriculum scores. This implies that those teachers who respond to the PRI items in a manner which indicates their orientation toward a whole language (or meaning-driven) approach to reading instruction are more likely to wait to give feedback to student miscues which change the meaning of the text. Teachers who ageree with a linear skills approach are more likely to give immediate feedback to miscues which violate the meaning of the text.

Table 4

Correlations Among the Teacher Belief and Teacher Feedback Variables

FEEDBACK VARIABLES:	1 No FDBK/LMC	2 WAIT/HMC	3 CONTEXT/SF
TORP	-.01	.08	-.08
PRI: Basal	-.18	.06	.18
Linear Skills	-.09	.29*	-.02
Interest-Based	-.12	-.16	.14
Natural Language	-.21	-.27*	.06
Integrated Curriculum	.12	-.33*	-.08
MEAN[+]	65.5	5.0	24.9
STANDARD DEVIATION	31.1	8.9	27.7
N (of teachers)	33	34	33

* $p < .05$

[+] These values are expressed as percentages.

Feedback Variables:

1 = Number of times teacher gave no feedback/number of low meaning change miscues (No FDBK/LMC)

2 = Number of times teacher waited longer than 3 seconds/number of high meaning change micsues (WAIT/HMC)

3 = Number of times teacher gave contextual cues/number of times teacher gave sustaining feedback. (CONTEXT/SF)

A subsample of the teachers were invited for follow-up interviews based on availability and their physical proximity to the research center. The individual interviews with the teachers were organized around a review of the audio or video taped interactions with their own reading groups. The teachers were informed that the purpose of the interview was to have them comment on their interaction strategies in order to shed light on what they might have been thinking about or what they were motivated by in choosing specific actions. The playback of the tapes was stopped at each miscue point (if there was no verbal feedback) or at the point of feedback if it was offered to the miscue. The following set of questions were then posed to elicit teacher comments:

1. Why did you choose to (or choose not to) respond to that mistake?
2. Why did you respond at that point in the text?
3. Why did you respond in the manner you did?

In responding to question 1, almost all of the teachers revealed a sensitivity to the meaning change characteristics of miscues in determining ones to which they would give feedback. Ignored miscues were explained by such comments as "It didn't change the meaning," "It wasn't an important mistake." Conversely, miscues which were responded to were described as "important," "significant," or "words which would be encountered again in the story."

The timing of verbal feedback (when offered) was the focus for the second question posed to the teachers. Delayed feedback was a rare occurrence for most teachers. When feedback was delayed it was usually with a high ability reader and the teachers typically explained their behavior as offering an opportunity for the student to self-correct. Immediate--particularly with the poorer readers--was explained as an effort to help the student before (s)he became very frustrated.

Interesting and consistent explanations for the choice of overt feedback offered were found. Almost all of the teachers used both sustaining and terminal types of feedback. The choice between these two was most often explained in terms of the reader's abilities or behaviors rather than as a function of teacher beliefs. Terminal feedback was associated with poor readers in trouble and explained by such statements as: "I wanted to build up his rate." "We needed to keep up the pace of the lesson." "He doesn't know that word anyway." The choice of sustaining feedback was explained by such statements as: "He can figure out the word with a little help." "He just wasn't paying close attention."

The form of sustaining feedback (in particular, context versus grapho-phonic prompts) seemed to be, more so than any other behavior, tied to the teacher's belief system. In commenting on these types of prompts, teachers came closest to talking about what they "thought" about reading. Teachers who relied on grapho-phonic prompts emphasized decoding. Unfortunately, the relatively few instances of sustaining feedback in our sample reduced the power of the statistical tests to reveal the relationships implied by the teacher's comments.

After listening to and commenting on the tapes, the teachers were asked how they had arrived at the feedback strategies they used in the classroom. Not one teacher reported having been given guidance in either preservice or inservice teacher training programs. All teachers reported that they had arrived at their strategies based on personal experience and a developing sense of what worked best for them. Despite the fact that all of the teachers relied on guided oral reading as a regular part of their program, few felt at all confident that their feedback strategies were as good as they should be. In the course of the interviews it became clear that most of the teachers had a basic feedback routine (or more precisely a set of routines) which they relied on during guided oral reading. The particular routine used was a function of (1) student or group ability characteristics and (2) teacher beliefs abour reading. How these two factors interact with one another to produce specific types of behavior during oral reading instruction is unclear at this point.

Conclusions

It would be easy to conclude that there is no strong relationship between teacher beliefs and teacher behaviors. It would be more reasonable based on the findings from the focused interviews; however, to bring to question the notion that we can validly assess beliefs through a paper-pencil type task. At best we are looking at what teachers think they should be doing. At worst we are looking at how teachers perceive we would like them to respond. The data from the focused interviews is far more enlightening with respect to teacher beliefs as they relate to teacher actions than with the TORP or the PRI. There seems to be clear areas of relationship between teacher beliefs and feedback particularly with respect to timing and form of sustaining feedback. The fact that timing was significantly related to two of the subscales in the PRI suggests that it has strong explanatory power. The fact that the form of sustaining feedback--in particularl context versus grapho-phonic cues--was explained most often in the interviews in terms of teacher beliefs points to another potential tie between conceptions and practice.

STUDY III

The major objectives of this study were:

1. to describe the characteristics of teacher verbal feedback to student oral reading miscues and their relationship to the qualitative features of those misuces;
2. to analyze differences in teacher verbal feedback and pupil miscue patterns relative to student ability groups; and,
3. to examine the effects of error rate and teacher verbal feedback patterns on pupil behaviors and growth in reading skill.

The scope of this study was much broader in terms of number of subjects, extent and number of interactions recorded, and breadth of variables considered than any of the previous work cited. In this regard, it also offered the opportunity to replicate many earlier findings as well as explore new ones.

Method

This study was field-based in nature. The data were collected during regular ongoing reading instruction in actual classroom so that naturally occurring behaviors in the research setting could be examined. There were certain elements of the research design, therefore, which were outside the investigators' control. Limitations to the study caused by the naturalistic setting and the various steps that were taken to adjust to the setting will be noted.

The research site was a school district in a city of approximately 100,000 people located in the south central region of the United States. The developmental reading program is a traditional, basal orientation, with an emphasis on ability grouped instruction. The Houghton Mifflin basal series was used in all but two classrooms. The classrooms were self-contained although teachers in most schools exchanged students for reading instruction in order to reduce the number of ability levels within a class.

Subjects

All second grade teachers (N=22) from the ten elementary schools in the district participated in the study. The teachers were all women--four were Black, one was Mexican American, and the remaining seventeen were Anglo. There were four teachers in two schools; three teachers in one school; two teachers in four schools; and one teacher in each of the remaining three schools. The students whose reading was studied were those assigned by their teachers to either their highest (N=179) or, lowest (N=178) reading groups. The mean number of students in both the high and low reading groups was around eight students at the time of initiation of the study.

Procedures

The participating teachers were given an overview of the research project during a fall orientation. They were told that the study would focus on the characteristics of guided oral reading as it is typically conducted in second grade classrooms. The teachers were trained to self tape- record their reading lessons. They were asked to record at least one lesson of their own choosing every two weeks with both their highest and lowest reading groups. They were encouraged to record those sessions in which they planned to do some guided oral reading. The importance of following normal classroom procedures during the recorded guided oral reading sessions was stressed. This self-recording data collection procedure had been tested and compared favorable to videotaping and direct observation in an earlier study (Hoffman & Kugle, 1982). Each teacher was visited by a research team at least once every two weeks to pick up the recorded tapes and deliver blank ones. This procedure was followed over a ten-week period. Thus five tapes were collected on each group through the course of the study.

Pre and post reading achievement measures were gathered as part of the district-wide testing program using the California Achievement Test. The pre-test was administered during the third and fourth weeks of schools prior to the initiation of the study, and the post-test was administered during the third and fourth weeks of the next academic year.

All participating teachers were interviewed individually once the data collection had been completed. During these interviews teacher practices, beliefs, and attitudes toward oral reading were explored.

Coding

The coders were trained to criterion levels using the procedures outlined in the FORMAS training manual (Hoffman, Gardner, & Clements, 1980). All coded sheets were reviewed for consistency and a random sample tested for inter-coder reliability by at least one other trained coder. Agreement levels exceeded .85 levels in all clusters of the taxonomy.

Student miscues and subsequent interactions were coded in sequence from a tape up to but not to exceed a total of twenty-five miscues or sixteen turn changes within a group--whichever came first. In addition to the miscue information, the students were monitored for number of words read correctly.

Data Analysis

The reading group group formed the basic unit of analysis for this study. The analyses were carried out in two phases.

Phase I

In Phase I the frequency data from each of the FORMAS clusters were converted to rates. These were calculated for each student in a given group by dividing the FORMAS variable under consideration by the total number of words read by that group and then multiplying by 100. In this way, for example, the rate of high meaning change substitutions for a given group could be calculated. These rates formed the basic dependent variables used in Phase I.

The major categories in each FORMAS cluster were first analyzed separately (Cluster IV was not included since very few instances of other student feedback were observed). In Cluster I a two-way between-within analysis of variance was run with ability groups as a factor and the miscue categories as the within group factor. In Cluster II a similar analysis was run for the reaction categories. Repetition miscues were omitted from the analysis because they tend to artificially inflate the category of immediate self-corrections. In Cluster III feedback categories were analyzed. Immediate self-corrections were omitted from the latter two analyses since they offered no opportunity for teacher feedback.

There are two major areas of concern inherent in this analysis. As noted earlier there were instances where teachers exchanged students within schools for reading instruction in order to reduce the number of levels of ability within a room. This meant that in some schools one teacher's low ability group might be more skilled than another teacher's high ability group. The problem was further complicated by extreme between school differences. In some cases the best reading group in one school were less skilled readers than the students in the lowest group in another school. For the ability group comparisons in Phase I; therefore, an operational decision was made to reclassify groups. High skilled and less skilled groups were formed based on a median split of average reading achievement for all groups using the initial student reading achievement test scores. Pre-test scores were available on 91% of all the subjects in the reading groups. The mean pre-achievement grade levels scores for the high skilled groups was 2.6 and for the low skilled groups the mean was 1.5. Unfortunately, the result of this reclassification procedure was that some teachers were represented twice within an ability level. Specifically, four teachers had both of their groups classified high skilled; another four teachers had both their groups classified low skilled. The remaining 14 teachers had one high and one low group each. In these 14 cases the teacher assigned ability level was consistent with the achievement test ranking. As a check on this problem, the Phase I analyses were run first with all teachers included and then with just the 14 who had high and low group splits. Since no differences in patterns of significance were uncovered in any of these comparisons, a decision was made to include data from all teachers in reporting the findings.

A second problem in Phase I analyses concerned the dependent variables. The dependent variables were expressed as rates and are therefore like proportions. They are not interval variables and therefore do not meet one of the required assumptions for analysis of variance. While there are transformations appropriate for proportion data (e.g., log), the consequence of not transforming is a loss of power in most instances. It will be seen shortly that any loss of power is not crucial to the hypothesis tested. Further, these types of transformations are difficult to use in this case because of the occurrence of zero frequencies in the data set. In all of the transformations a zero must be made into an arbitrarily small number. If this is done, the analyses which contain these proportions are very difficult to interpret. A decision was made therefore to perform analyses in Phase I (and in Phase II) directly on the untransformed data set.

Phase II

In Phase II the data were analyzed using multiple regression following procedures recommended by Ward and Jennings (1973). Multiple regression permitted an examination of the effects of reading achievement level and error rate on the dependent variables. The predictor variables studied were achievement (pre-test); error rate; and teacher feedback behaviors (type, form, timing, and point of feedback). Criterion variables examined were pupil behaviors (miscue characteristics, reactions, and resolution) and post-test achievement scores. To prepare the data for the multiple regression analyses, frequencies were computed for all groups on the independent and dependent miscue and teacher feedback variables. Within clusters these frequencies were transformed to proportions. So, for example, we calculated the proportion of miscues within a group which were substitutions; or the proportion of miscues which were high versus low meaning change. A correlation matrix for each of the criterion variables was then constructed using all of the predictor variables. All predictor variables which correlated significantly with the criterion variables ($p < .1$) were included in the multiple regression equation. The order of entry into the equation was always achievement (pre-test) followed by error ratee followed by teacher feedback behaviors. A step down regression procedure was followed to determine which variables contributed in a statistically significant way to the prediction of the criterion. The full versus restricted models were constructed by removing the predictor variables in the reverse order from which they had been entered. Thus, the last variable tested was always achievement on the pre-test.

Results

All teachers in the study relied on "round-robin" or turn-taking around the reading group as the basic procedure for conducting guided oral reading. The interviews with the teachers revealed that overall they had positive feelings regarding the benefits and importance of oral reading and used oral reading regularly. The teachers also confirmed at this time that the interactions recorded on the tapes were representative of what went on during a typical guided oral reading session.

The tapes out of the total number of tapes to be collected (i.e., 220, with five sessions for each of the 44 groups) were missing. In some cases this was due to mechanical problems with the recorders, and in other instances these teachers had simply missed a session. No single teacher group had more than one tape missing.

Over forty-five hundred separate miscues were recorded and analyzed for teacher feedback characteristics. The data presented in Table 5 reflect the general distribution of miscues across the five sessions by teacher assigned ability groups within classes. The data for each session are broken down by number of miscues (NM); number of turns (NT); total number of correct words read (TNCWR); and reading rate in words per minute (RR). The reader should note that the breakdown by ability in this table is based on teacher assigned goups not the regrouping based on achievement levels that will be used in all subsequent analyses.

Pupil Miscue and Reaction Patterns

The error rate for the high groups was .05 miscues per 100 words (95% accuracy). The error rate for the low groups was .09 miscues per 100 words (91% accuracy). This difference was statistically significant at the $p < .001$ level. The distribution of miscue types was found to be statistically different ($F(5,34) = 27.18$, $p < .001$) across all students. The miscue categories (i.e., insertions, omissions, substitutions, mispronunciations, hesitations, and repetitions) have different rates of occurrence. (There were so few instances of "call for help" miscues that this category identified in the FORMAS taxonomy was eliminated from consideration.) There was also an ability-by-miscue type

Table 5

Average number of miscues, turn changes, words read correctly, and reading rate for high and low groups*

	Ability Groups	SESSION I	II	III	IV	V
N of Miscues (NM)	High	20.8	21.1	20.4	20.1	23.7
	Low	21.6	21.3	22.5	21.6	23.3
Turns (NT)	High	8.5	9.2	8.6	7.6	8.2
	Low	6.8	8.0	7.4	6.2	7.3
Total Correct Words Red (TCWR)	High	408.0	460.5	408.6	413.3	434.3
	Low	238.4	275.6	290.6	282.2	309.6
Rate (RR)	High	106.6	109.4	108.2	110.6	110.3
	Low	75.0	81.1	87.0	85.7	91.8

*by teacher assignment

interaction ($F(5,170) = 5.01$, $p < .001$) indicating that the low skilled and the high skilled groups differed with respect to the rate of certain kinds of miscues (Table 6). The proportion of hesitations was greater for the less skilled than the high skilled readers. On all other miscue types the proportion was greater for the high skilled readers.

A two-way interaction ($F(2,68) = 18.80$, $p < .001$) was found between ability and the degree of meaning change in insertion, omission, and substitution miscues. The less skilled readers had more meaning change miscues (62%) than the high skilled readers (54% of their miscues). A two-way interaction ($F(1,34) = 11.84$, $p < .01$) was also found between ability groups on the degree of grapho-phonic similarity in substitution and mispronunciation type miscues. The miscues of the high skilled readers resembled the target words grapho-phonically 37% of the time, those of the less skilled readers resembled the target words grapho-phonically 29% of the time. An analysis of substitution miscues alone failed to reveal any statistically significant differences between ability level on grapho-phonic similarity.

The distribution of reactions to miscues was found to be statistically significant ($F(4,136) = 14.52$, $p < .001$) across all students. There was also a statistically significant two-way interaction ($F(4,136) = 3.14$, $p < .05$) between reaction type and ability groups (Table 7). The more skilled readers exhibited a higher proportion of continuations and self-corrections following

Table 6

Distribution of miscue types within ability groups

Miscue Type	High Skilled		Low Skilled	
	Percent of total	Rate per 100 words read	Percent of total	Rate per 100 words read
insertions	5.07%	.23	2.89%	.22
omission	13.30%	.59	7.82%	.60
substitutions	35.65%	1.59	34.53%	2.65
mispronunciations	20.76%	.92	19.41%	1.49
hesitations	8.77%	.39	22.27%	1.71
repetitions	16.45%	.73	13.08%	1.00

Table 7

Distribution of miscue reaction patterns within ability groups

Pupil Reactions	High Skilled		Low Skilled	
	Percent of total	Rate per 100 words read	Percent of total	Rate per 100 words read
continuations	41%	.28	27%	.32
repeated attempts	12%	.08	12%	.14
pause	6%	.04	10%	.12
no opportunity	9%	.06	26%	.31
self correction	32%	.21	25%	.29

their miscues while the less skilled paused more and were more likely to have no opportunity to respond to their own miscues (i.e., the teacher coming in before the student manifests any of the other reaction behaviors).

Teacher Verbal Feedback Patterns

The distribution of feedback types was found to be statistically different ($F(2,68)= 50.00$, $p < .001$). There was also a statistically significant two-way interaction ($F(8,272)= 17.59$, p $.001$) between miscue type and feedback type (Table 8). There was no statistically significant difference between the type of feedback and the two ability groups (Table 9). There was, however, a statistically significant interaction ($F(2,68)= 6.48$, $p < .005$) between feedback type and meaning change on insertion, omission, and substitution type miscues (Table 10). The proportion of no verbal feedback tended to decrease as the degree of meaning change increased. No statistically significant differences were found related to the form of sustaining feedback and ability groups. Nor were there any statistically significant differences related to timing or feedback and ability groups.

Predicting Pupil Behaviors from Achievement, Error Rate, and Teacher Behaviors

Multiple regression analyses were used to identify teacher variables which seem to contribute to the prediction of pupil behaviors while controlling for both reading ability (pre-reading achievement score) and text difficulty (miscue rate). For each

Table 8

Distribution of teacher feedback to various types of miscues

Miscue Type	Teacher Verbal Feedback					
	No Verbal		Sustaining		Terminal	
	Percent of total	Rate per 100 words	Percent of total	Rate per 100 words	Percent of total	Rate per 100 words
insertions	90%	.19	8%	.02	2%	.01
omissions	80%	.35	10%	.05	10%	.05
substitutions	60%	1.04	21%	.37	19%	.31
mispronunciations	55%	.30	18%	.10	27%	.15
hesitations	30%	.29	16%	.15	54%	.52

Table 9

Distribution of teacher feedback type related to ability groups

Feedback Type	High Skilled		Low Skilled	
	Percent of total	Rate per 100 words read	Percent of total	Rate per 100 words read
No verbal feedback	68%	.36	49%	.50
Sustaining feedback	16%	.08	19%	.19
Terminal feedback	16%	.08	32%	.33

Table 10

Distribution of feedback type related to the degree of meaning change involved in the miscue

Degree of Meaning Change	Teacher Verbal Feedback					
	No Verbal		Sustaining		Terminal	
	Percent of total	Rate per 100 words	Percent of total	Rate per 100 words	Percent of total	Rate per 100 words
Low Meaning Change	75%	.28	13%	.05	12%	.04
High Meaning Change	58%	.24	22%	.09	20%	.08

of the possible pupil behaviors a full model was constructed from all of the teacher variables which were significantly correlated from all of the teacher variables which were significantly correlated with that pupil variable. Pre-achievement and error rate were always entered into each model as co-variates. Each model was then systematically reduced in terms of predictor variables in the following steps: (1) timing and point of feedback variable; (2) feedback from variable; (3) feedback type variable; (4) the error rate variable; and, (5) the achievement variable. At each point the significance of the R^2 drop was noted. Since steps 1, 2, and 3 contain more than one predictor vector these steps were further investigated if the whole reduction resulted in a significant R^2 drop. The final model was then constructed of those variables which proved to significantly add to the prediction of pupil behaviors. These final models are described below.

The models for each of the miscue characteristic variables are presented in Table 11. In this single table the most critical data from a number of analyses run for each of the miscue characteristics is summarized. For example, the only variable found to be significant in predicting the level of insertions was error rate. The R^2 drop (.1494) using the step down procedure in this case is the same as the R^2 value for the whole model since there is only one predictor variable. The sign of the Beta weight value for error rate tells us that the

Table 11

Multiple regression models for predicting pupil miscue characteristics

Criterion	R^2	Predictor Variable(s)	Beta Wt.	R^2 Drop	F Test
Insertions	.1494	Error Rate	-.3866	.1494	7.38(1,42) $p<.01$
Omissions	.2198	Achv. (Pre)	.4689	.2198	11.27(1,40) $p<.01$
Substitutions	.2147	Achv. (Pre)	-.3913	.1997	9.92(1,39) $p<.01$
		Error Rate	-.5219	.1126	5.59(1,39) $p<.05$
Hesitations	.7468	Error Rate	.6720	.6993	97.67(1,42) $p<.01$
		Terminal Feedback	.2730	.0475	7.70(1,41) $p<.01$
Repetitions	.1909	Error Rate	-.4369	.1909	9.91(1,42) $p<.01$
Little Meaning Change	.2890	Achv. (Pre)	.4007	.2035	10.22(1,40) $p<.01$
		Point of Feedback (before next sentence break)	-.2966	.0854	4.69(1,39) $p<.05$
High Grapho-Phonic Similarity	.0935	Error Rate	-.3058	.0935	4.33(1,42) $p<.05$

relationship is a negative one. In the case of predicting the level of Hesitations two variables were found to be significant: error rate and terminal feedback. The R^2 value for the full model in this case is .7468. The R^2 drop values for terminal feedback (.0475) and error rate (.6993) indicate the change in R^2 value for the full model when these variables are removed from the model. The F test values relate to the statistical significance of these changes. And again, the signs for the Beta weights indicate that the relationship between both the predictor variables (Error rate and Terminal feedback) and the criterion (Hesitations) is positive. Pre-achievement was found to be a significant factor in predicting three of the miscue characteristic variables: omissions and little meaning change miscues. The range in R^2 values in predicting miscue characteristics for the various models was from .09 with high grapho-phonic similarity to .75 with repetitions. Teacher verbal feedback variables were found to be significant in the best models for predicting hesitations (a positive relationship with terminal feedback) and little meaning change miscues (a negative relationship with the point of feedback before the next sentence break).

The models for each of the pupil reaction variables are presented in Table 12. Here, pre-achievement was found to be a significant factor in predicting all variables except repeated attempts and immediate self-corrections. Error rate was

Table 12

Multiple regression models for predicting pupil miscue reaction patterns

Criterion	R^2	Predictor Variable(s)	Beta Wt.	R^2 Prop	F Test
Continuations	.7071	Achievement (Pre)	.2675	.0863	7.32(1,39) $p<.01$
		Error Rate	-.3213	.1809	15.35(1,39) $p<.01$
		Terminal Feedback	-.3051	.0879	8.99(1,38) $p<.01$
		Point of Feedback (after next sentence break)	.2909	.0788	9.55(1,37) $p<.01$
Repeated Attempts	.1822	No Verbal Feedback	.3816	.1034	4.85(1,42) $p<.05$
		Timing (immediate)	.2870	.0788	3.95(1,41) $p<.05$
Pauses	.6182	Achievement (Pre)	-1.3761	NS	NS
		Error Rate	-2.0840	NS	NS
		Timing (immediate)	- .4187	.3247	21.57(1,38) $p<.01$
		(Achv (pre) * Error Rate)	2.0539	.1904	18.45(1,37) $p<.01$
No Opportunity	.7593	Achievement (Pre)	.3814	NS	NS
		Error Rate	1.2163	.2905	23.50(1,39) $p<.01$
		Terminal Feedback	.5282	.2123	29.91(1,38) $p<.01$
		(Achv (pre) Error Rate)	-.7797	.0290	4.47(1,37) $p<.05$
Immediate Self-Corrections	.4231	Error Rate	-.4301	.3067	18.58(1,42) $p<.01$
		Point of Feedback (at next sentence break)	.3629	.1164	8.27(1,41) $p<.01$

significant in all models except for repeated attempts. The range in R^2 values in predicting reactions was from .18 with repeated attempts to .76 for no opportunity. Teacher verbal feedback variables were found to be significant in the following instances for reaction: (1) in predicting continuations (a negative relationship with terminal feedback and a positive one with feedback delayed until after the next sentence break); (2) in predicting repeated attempts (a positive relationship with immediate feedback); (3) in predicting pauses (a negative relationship with immediate feedback); (4) in predicting no opportunities to respond (a positive relationship with terminal feedback); and, (5) in predicting immediate self-corrections (a positive relationship with feedback given at the next sentence break).

In determining the relationships among teacher variables and achievement data an effects analysis was run using post-achievement as the criterion variable with pre-test scores included as a predictor. Valid pre- and post-test data were found available on 76% of the total population of students. The model for predicting post-achievement is presented in Table 13. Both error rate and terminal feedback showed a small but significantly negative relationship with post-achievement.

Discussion

The findings of this study will be discussed in terms of the three major objectives set forth earlier.

Table 13

Multiple regression model for predicting achievement on the post test

Criterion	R^2	Predictor Variables	Beta Wt.	R^2 Drop	F Test
Achievement (Post)	.8904	Achievement (Pre)	.8454	.8621	250.1(1,40) $p<.01$
		Error Rate	-.0541	.0142	4.46(1,39) $p<.05$
		Terminal Feedback	-.1498	.0141	4.89(1,38) $p<.05$

1 To describe the characteristics of teacher verbal feedback to students oral reading miscues and their relationship to the qualitative features of those miscues. The findings of this study are consistent with those of Study II. The type of teacher verbal feedback offered in the context of oral reading is clearly related to pupil miscue characteristics. Certain types of miscues such as hesitations and mispronunciations are more likely to receive an overt response from the teacher than other types of miscues. Those miscues which cause or result in a high degree of meaning change are more likely to be responded to than those which are associated with little meaning change. Teachers appear to be adjusting their manner of responding or not responding to miscues based on their qualitative characteristic rather than using a simple pattern of: if error then respond.

2. To analyze differences in teacher verbal feedback and pupil miscue patterns relative to student ability groups. Here again, the pattern of miscues for the ability groups studies are consistent with the body of miscue research and our own earlier work. The less skilled readers tended to make proportionately more hesitations and fewer insertions, omissions and repetition type miscues than the more skilled readers. The miscues of the less skilled readers also violated text meaning proportionately more often than the more skilled. The miscue reaction patterns were different for the two groups of readers. The less skilled readers were more likely to pause or be interrupted immediately

by the teacher while readers in the high skilled groups were more likely to continue and immediately self-correct. The different patterns of verbal feedback in terms of terminal, sustaining and no response did not reach levels of statistical significance between the less skilled and the more skilled readers although the distribution is in the same direction as that of Study II and that of Allington (1978, 1981). We attribute this at least in part to the fact that the achievement levels and error rates were not as disparate in this study as they were in our own earlier work. For example, the error rate for the less skilled readers in the Hoffman and Clements (1981) study was 11 miscues per 100 words read. In this study the error rate for the less skilled readers was nine miscues per 100 words read.

3. To examine the effects of error rate and teacher verbal feedback patterns on pupil behaviors and growth in reading ability. Achievement levels, error rate, and teacher verbal feedback variables showed clear and strong predictive relationships to pupil reading miscue and reaction patterns. That reading achievement is related to miscue and reaction patterns is not new. That error rate is independently and significantly related to these patterns has been suggested in the past (e.g., Biemiller, 1979; Blaxall & Willows, 1981) and given clear support in this study. Indeed, with some miscue characteristics (hesitations, repetitions, substitutions, and grapho-phonic similarity) and reaction patterns (i.e., immediate

self-corrections) error rate predicts pupil behavior independent of achievement level. Certain teacher verbal feedback behaviors were shown to be related significantly to a number of pupil miscue and reaction patterns. The most noteworthy behaviors were a positive relationship between hesitation miscues and terminal feedback, and a positive relationship for delaying the point of feedback with continuation and immediate self-correction pupil behaviors following miscues.

The findings related to predicting achievement gain are particularly interesting. It was no surprise that pre-achievement predicts post-achievement. It is significant, though, that both error rate and at least one teacher feedback variable (terminal feedback) are also significantly and negatively related to gain.

The negative relationship found between error rate and achievement is one consistent with a large body of classroom research. High pupil success rates in specific learning tasks are closely related to overall gain. The notion of appropriate placement in practice materials has been a part of reading lore for a long time. The research literature is beginning to offer strong empirical support for this belief and even suggest that the error rates we have established or agreed on (e.g., 95% for instructional level) may need to be revised upwards to a higher success rate (Beck, 1981; Fisher et al., 1978; Good & Beckerman, 1978). The arguments for this in theory and practice are many.

At lower error rates the students are getting much more actual reading over the same amount of engaged time. At high error rates students encounter frequent failure and frustration. High error rates lead to constant disruption of activity flow, and this gives rise to management problems in group settings. At high error rates the students are not able to use the same strategies (e.g., relying on surrounding words and meanings as clues) as they could in materials at low error rates. All of these factors contribute to vicious cycle situations where the student hesitates and the teacher gives the word either to build up rate or because they realize the student won't be able to successfully identify the word on his/her own. The next time the student encounters a little frustration with a word, he or she may be just a little more likely to wait for the teacher to give the word and the teacher a little more likely to oblige.

The negative relationship between terminal feedback and growth in reading achievement would suggest that this strategy may be harmful. However, the relative advantages of doing noting or giving sustaining feedback are not clear from the results of this study. It would seem, though, that a high degree of tolerance (i.e., no verbal feedback) for miscues--particularly those with low meaning change--is warranted given the patterns experienced by the high skilled readers. The only guidance related to the beneficial characteristics of sustaining feedback is to be gained by looking at the prediction models for miscue reactions. The timing (both in terms of point of interruption and elapsed time) of the response seems potentially more important than the actual form of response. Delayed responses or feedback is associated with continuations and self-corrections, both of which are characteristic of the more skilled readers. By contrast immediate feedback by the teacher are associated with pauses and repeated attempts, and pause reactions are characteristic of less skilled readers. Thus delaying overt feedback, whatever the particular form may be more beneficial than the offer of immediate assistance.

What is emerging from this study and other recent studies is a fairly clear picture of what is going on with respect to miscue focused interactions during oral reading instruction. Pupils and teachers are each influencing the behavior of the other. The mutually adaptive efforts of teacher and student to ensure smooth activity flow helps to explain in large part the difference in the interaction patterns between the high and low ability groups. The effects analysis both on short term (pupil miscue and reaction patterns) and long term (pupil achievement) measures suggest specific ways in which the context for guided oral reading (in terms of error rate and specific teacher feedback behaviors such as wait time and the use of terminal feedback) is related to pupil behavior.

As part of Study III several other smaller studies were conducted at the same research site. Each of these will be reported on in turn.

Dialect Miscues and Verbal Feedback

All miscues collected as part of Study II data collection were scrutinized for the influence of dialect on miscue patterns. There was a two staged identification procedure set up for dialect miscue analysis. First, the original coders of the tapes were instructed to mark for dialect any miscue which they even suspected was influenced by dialect. Each of the "suspicious" miscues was later reviewed by a sociologist with special training in dialect. The miscues were analyzed in terms of the following:

(1) Was their dialect inference?

(2) What type of dialect interference was involved?

(3) How were patterns of feedback different for dialect as opposed to non-dialect influenced miscues.

The analysis revealed the following patterns:

(1) There was likely dialect involvement in a very small portion of the total number of miscues (i.e., less than 1% of the total)

(2) The "types" of dialect involvement were basically the same (in terms of focus) as those observed by Goodman and Burke (1973)

(3) Dialect based miscues appeared to be treated (for the most part) in the same way as any other miscue by the

> teacher. The degree of meaning change was more clearly associated with response patterns than the presence or non-preservice of a dialect feature. This was confirmed later in interviews with teachers.

Our conclusion is that while the existence of dialect based miscues addresses an important theoretical issue - in its confirmation of the influence of reader language knowledge in text reading - it does not appear to have at this point a great deal of practical significance. That is, teachers are not reacting or not reacting overtly to dialect based miscues in a manner different from what their typical response patterns would be.

Students' Beliefs and Attitudes about Oral Reading Instruction

Interviews were conducted with approximately four students selected at random from each of the reading groups in Study III. The study was designed to explore oral reading instruction from the students' perspective.

Students from the high and low reading group (N=207) in 23 second grade classrooms in this district's ten elementary schools participated in the study. There were a comparable number of males and females in the sample.

Procedures

The data for this project were collected during weekly visits to the research site over a three-month period in the fall of the year. The students in each group were selected at random.

All tests and interviews were conducted individually outside of the classroom setting. Students were first administered the Slosson Oral Reading Test (SORT) to provide an estimate of reading achievement levels. This brief testing period was followed by an extensive interview session.

Instrumentation

The interview instrument consisted of 80 questions presented orally to students in a closed response format. Some of the items required the student to respond with a "yes" or "no" (e.g., "Do you enjoy reading?"). Others required the students to state a preference (e.g., "Would you rather read out loud or read silently?"). No item contained more than two choices from which the students were to select. Six of the items were repeated exactly in other parts of the interview to check for response consistency. The items were clustered into six major sections related to the following themes: I. Attitudes; II. Perceived Ability; III. Proficiency Constructs; IV. Teacher's role; V. Social/Evaluation Context; and VI. Models.

The items within each section had been developed and pilot tested as part of an earlier study (Hoffman, Kastler, and Nash, 1981). The first set of ten items in the Attitudes section explored students' feelings about reading in general, and the second set of ten items examined feelings toward oral reading in particular. The Perceived Abilities section had a similar breakdown with nine items focusing on their silent reading ability and nine items on their oral reading ability. In the Proficiency Construct section there were five items designed to explore what the respondent knew about good oral reading performance and another five items over what the respondents knew about poor oral reading performance. The Teacher's Role section contained five items covering what the students liked the teacher to do when they made a mistake or otherwise encountered difficulty in oral reading. The Social/Evaluation Context section contained fifteen items related to how the respondents felt about others observing or judging their oral reading performance. The final section of the instrument contained five questions related to what models of oral reading the respondents are exposed to both in and out of the school setting.

RESULTS

A preliminary analysis was conducted to test the reliability of student response patterns. Tetrachoric correlation coefficients were computed for the six pairs of repeated items in the interview. The average correlation for all six pairs of items was .79. Each of the individual correlations was statistically significant at the $p < .05$ level.

Correlation matrices for each of the six major sections of the interview instrument were then computed as a test of construct validity. Separate matrices were formed for the general vs. oral reading attitudes section and the silent vs. oral reading perceived abilities section. The most highly correlated items within each section were then selected as the basis for computing a composite score on each subsection. There were no significant correlations between any of the items in the proficiency construct section so no composite score was created for this section. The Social/Evaluation Context section was broken down based on item content and inter-time correlation patterns into two new areas of audience effects and negative affect toward oral reading performance. The following areas were thus identified: (1) General Attitude (3 questions); (2) Oral Reading Attitude (5 questions); (3) Perceived Ability - silent reading (4 questions); (4) Perceived Ability - oral reading (4 questions); (5) Teacher's Role (3 questions); (6) Audience Effects (3 questions); (7) Negative Affects (3 questions); and (8) Home Reading Models (4 questions).

A multiple regression analysis was then performed using the SORT achievement test scores as the criterion variable and the eight composite scores as the predictors. The Multiple R was found to be .37 ($p < .001$). This figure meets Cohen's (1977) criteria for a moderate effect size. Three of the eight composite scores were found to explain most of the variance. These were: Perceived ability in oral reading; teacher role; and audience effects. A reduced multiple regression using just these three predictor variable yielded a multiple F of .34 with an adjusted R^2 of .10. The Beta weights for the three composite variables were .22 for perceived oral reading ability (p .002);

.20 for teacher role ($p < .004$); and .13 for enjoyment/audience effects ($p < .07$). The questions subsumed in each of these three composite variables are presented in Figure 13.

A subsample of high and low ability readers was identified next for purposes of performing an item analysis comparison of response patterns. The high ability reader group (N=77) consisted of readers assigned to a high reading group in their classrooms and scoring higher than the 3.5 grade level on the SORT. The low ability reader group (N=50) consisted of readers assigned to a low reading group in their classroom and scoring less than the 2.5 grade level on the SORT. Only the most striking points of contrast in response patterns will be presented in this summary.

The responses of students in both the high and low groups reflected positive feelings about reading in general. Questions which made either direct or indirect comparisons of silent and oral reading tasks revealed that both groups hold a more positive view of silent reading than oral reading. A majority of high readers (70%) reported that reading out loud is fun, while the majority of low readers (52%) reported that it was not fun. Both groups responded overwhelmingly (95% to 5%) that their teachers thought of them as good silent readers. The figure remained almost the same (93% yes) for the high group when asked whether their teacher thought of them as good oral readers. In the low group, though, the percent of students who reported that their teacher did not think of them as good oral readers rose to 25%. Only half of the low group regarded themselves as good oral readers whereas 83% of the low group regarded themselves as good silent readers. For the high group, 87% regarded themselves as good oral readers and 95% as good silent readers.

Both groups overwhelmingly preferred that the teacher help them figure out unknown words over giving them the word (89% vs. 11%). When asked whether they liked for the teacher to call on other kids to help with words, 73% of the low group regarded the practice favorably as compared to only 56% of the high group.

FIGURE 13

Perceived Ability in Oral Reading

Are you a good oral reader?

Do you read out loud very well?

Do other kids think you are a good oral reader?

Does your teacher think you are a good oral reader?

Teacher's Role

Do you like for the teacher to tell you words when you don't know them?

Do you like for the teacher to call on other kids to help you with the words?

Do you like for the teacher to help you figure out words you don't know?

Audience Effects

Do you like to read out loud when the teacher calls on you in the reading group?

Do you like to read out loud to the whole class?

Do you like to read out loud to your teacher when you are alone together?

A vast majority (90%) of the high group readers reported that they like to read out loud in their reading group, 44% of the low group readers responded that they did not like to read out loud in their groups. This difference is in contrast to the congruent pattern of responses to the question of whether they enjoyed reading out loud to the teacher when they were alone (83% yes for the high group and 74% yes for the low group). Students in both groups revealed sensitivity to the evaluative aspects of reading orally in groups. They agreed that oral reading performance affected placement in high or low reading groups. Most students in both groups reported that they tried hard not to make mistakes when reading orally. The majority of students in both groups also reported feeling nervous when reading orally with others listening.

DISCUSSION

The findings from this study suggest that even by the beginning of second grade students have some developing beliefs and attitudes toward oral reading instruction. These beliefs and attitudes are clearly tied to reading ability. The three composite variables (i.e., perceived ability in oral reading, teacher's role, and audience effects) identified through the multiple regression analysis point to those areas where beliefs and attitudes are strongest. The better the reader the greater the enjoyment regardless of the social or performance context. Also, the better the reader the greater the desire for the teacher to assume a low profile in helping when difficult words are encountered. The poorer the reader the less the enjoyment and the desire for teacher involvement. It is also interesting that the variable perceived ability in oral reading relates (i.e., predicts) reading achievement much better than does perceived ability in silent reading. Valid or not, oral reading performance seems to be the best gauge for students to use in evaluating their own ability.

The analysis of specific items relative to extreme ability levels adds additional evidence to suggest that, at least for poor readers, oral reading is a stressful and anxiety producing part of the classroom instructional routine.

Effects of Feedback on Subsequent Word Identification Strategies and success

The purpose of this study was to explore under experimental conditions the ways in which variation in the form and timing of feedback related to differences in pupil performance.

METHOD

The study was conducted in the public school system of a moderate size city in the south central area of the United States. All ten of the elementary schools in the district participated in the study.

Subjects

There were 84 students in the study who had been selected proportionally from the high reading groups of twenty second grade classrooms in STudy III. Students were given the Slossen Oral Reading Test as a measure of general reading achievement. Those scoring below the 1.0 grade level on this test were excluded from consideration. These subject selection criteria were used to avoid having students participate in the experiment for whom the text materials would be too difficult.

Design

Six different treatment conditions were devised for use in this study. These six conditions varied across the two dimensions of form and timing of feedback. The basic feedback forms were (1) terminal - or supplying the word to the student; (2) sustaining grapho-phonic - or attempting to help the student identify the text word by focusing attention or orthographic features of the word (i.e., "Look carefully at the letters in the word" and "Try to sound it out"; and (3) sustaining context - or attempting to help the student identify the text word by focusing attention or surrounding structures and meanings (i.e., "Let's try reading that sentence again" and "Does that word make sense? What word would fit better?:). The prompts used for the sustaining conditions were developed based on high frequency strategies used by teachers in earlier field studies. The timing of feedback was varied in terms of the point of interruption; immediate (before or immediately after the word following the miscue); and delayed (at the first sentence following the miscue).

Procedures

The students were randomly assigned to treatment conditions. They were asked to read aloud both specially designed passages under their assigned feedback condition. Feedback was offered to the students only for those miscues made on the eight difficult words. This made a total of 16 opportunities for feedback given that each of the difficult words occurred twice. Student miscues on all other words were ignored. These sessions were tape recorded. The sessions were later reviewed by the researchers for accurate implementation of the treatment condition. If upon review it was found that the experimenter failed to give the correct feedback on over 10% of the student miscues in difficult words then that subject's data was discarded. This review process resulted in the deletion of data from only two subjects.

Data Analysis

Oral reading performance on the sixteen experimental words in this study was coded using a modified version of the FORMAS taxonomy (Hoffman and Baker, 1981). The words were coded initially for miscue type (omission, substitution, mispronunciation, call for help, hesitation, and repetition). Omissions, substitutions and mispronunciations were further classified for high and low meaning change and substitutions and mispronunciations were classified for grapho-phonic similarity. Each miscue was also categorized for the subject's immediate reaction to his/her miscue (continuations, repeated attempts, pauses, calls for help, self-corrections) and for the ultimate resolution of the miscue (teacher identified miscue, student identified miscue). The other words in the text were coded only for their occurrence of a miscue. Expert coders listened to tape recordings of the experimental sessions to code reading performance. For each of the categories of miscues described above the subject's errors were expressed as a percentage of the opportunities for error in that category. This was the dependent variable used in analysis described below except where otherwise noted. The basic design of this experiment included three factorialized between subject variables. These were the timing of the feedback, the form of the feedback and the reading ability of the subject. Students whose reading scores exceeded the sample mean (4.7 grade level) on the SORT were classified as higher ability readers ($X=5.7$). Students who scored below the sample mean were classified as lower ability readers ($\bar{X}=3.3$). It should be noted that the classification by ability is a relative one.

A series of five analysis of variance were run using this design with the addition of one of the FORMAS within subject variables (miscue type, meaning change, grapho-phonic similarity, reaction, and resolution). Minor changes from analysis to analysis are discussed in the results section. In every case an unweighted means solution was used to solve the problem of unequal cell sizes.

A final analysis was run in which the percent of second miscues which were also missed the first time were analyzed as a function of the form of feedback, the timing of feedback, and reading ability.

RESULTS

Preliminary analysis revealed no statistically significant differences between the six treatment groups on either the percentage of miscues on target words or on the total number of miscues made including those outside the target words. The overall error rate was 41% on the target words and 6% when all miscues were considered. There was a statistically significant difference ($p < .001$) between the high and low ability readers in their error rates on target words (23% versus 59%) and on all text words 4% versus 8%).

The first basic set of analysis examined the percent of miscues on target words as a function of miscue type, form of feedback, timing of feedback, and ability group. For these analysis and those that follow omission, insertions, and calls for help were not considered due to their low frequency (i.e., less than 1% of the total). The distribution of miscues across the remaining three categories differed significantly across all treatment and ability groups ($F(2,144)=29.04$, $p<.01$). The most frequent types of miscues, across all groups were mispronunciations (56%). There were no statistically significant main effect differences in the distribution of miscue types among the six treatment conditions or between ability groups. There was, however a statistically significant four-way interaction between miscue type, feedback type, feedback timing and ability groups ($F(4,144)=531$, $p<.01$). The data for higher and lower ability readers relative to this interaction are presented in Table 14. The major source of the interaction seems to be related to differential performance of the poorer readers under the various feedback conditions.

Subjects in the lower ability group under the delayed grapho-phonic feedback condition had a much higher incidence of mispronunciation type miscues as compared to those in the immediate grapho-phonic condition. Under the immediate condition

TABLE 14

Percent of Miscues as a Function of Miscue Type, Form of Feedback, Timing, and Ability Group

	Form	Timing	Substitutions	Mispronunciations	Hesitations
Lower Ability	Terminal	Imm.	4.33	27.83	25.50
		Delay	14.38	22.06	15.06
	Sus. G.P.	Imm.	7.78	25.94	29.39
		Delay	14.40	33.20	10.60
	Sus. Con.	Imm.	8.67	46.92	4.25
		Delay	6.31	17.38	25.06
Higher Ability	Terminal	Imm.	.81	22.19	3.19
		Delay	.92	9.93	2.71
	Sus. G.P.	Imm.	8.33	12.67	7.42
		Delay	1.95	11.50	7.00
	Sus. Con.	Imm.	1.86	11.71	4.50
		Delay	.00	20.63	3.25

the lower ability readers in the grapho-phonic treatment condition tended to hesitate rather than mispronounce. The lower ability readers in the delayed context feedback condition demonstrated a much higher incidence of hesitation type miscues as compared to those in the immediate context prompt condition. Lower ability readers in the immediate context condition tended to mispronounce rather than hesitate.

The patterns for the higher readers under the sustaining conditions tended to be in direct contrast to those of the lower readers in particular with respect to mispronunciations. Immediate grapho-phonic feedback inflated the level of mispronunciations. Immediate context diminished mispronunciations. Under the delay conditions those patterns were reversed for the higher ability readers. Terminal feedback under both immediate and delayed conditions had similar effects for both higher and lower ability readers.

Reader performance was analyzed next under sustaining feedback conditions for the two most frequent miscue types (mispronunciations and hesitations) to determine whether it was the teacher or the student who was ultimately responsible for identifying a text word once a miscue had been made. There was a statistically significant ($p < .001$) five-way interaction between miscue type, feedback type, feedback timing, ability group and resolution (Table 15). For the higher reading group, the sustaining context conditions -- both immediate and delayed --

TABLE 15

Percent of Miscues as a Function of Miscue Type,
Form of Feedback, Timing, Ability Group, and Resolution

	Form	Timing	Mispronunciations		Hesitations	
			Teacher ID	Student ID	Teacher ID	Student ID
Lower Ability	Terminal	Imm.	15.67	12.00	21.83	3.33
		Delay	17.38	4.75	7.88	5.38
	Sus. G.P.	Imm.	13.78	8.44	23.00	5.56
		Delay	20.80	12.80	7.60	2.60
	Sus. Con.	Imm.	37.33	9.67	4.17	.00
		Delay	7.13	10.00	13.38	9.63
Higher Ability	Terminal	Imm.	16.63	5.38	2.38	.75
		Delay	5.43	4.57	2.71	.00
	Sus. G.P.	Imm.	7.33	5.17	3.00	4.33
		Delay	5.60	5.70	3.20	3.20
	Sus. Con.	Imm.	2.71	7.00	2.71	.00
		Delay	3.00	15.75	1.50	1.50

were superior to any of the other conditions in eliciting student over teacher identification or mispronunciations. The same was true for the lower readers in the delayed condition. In the immediate condition, however, the context group was the highest in teacher identification of mispronunciation miscues.

The final area of analysis focused on the percent of miscues made on a target word the second time it was encountered given a miscue on the first encounter. The percent of errors were analyzed as a function of feedback type, feedback timing and ability group. These error rates are presented in Table 16. A statistically significant main effect was found for timing on error rate ($F(1,72=5.49, p < .05$). Although not reaching levels of statistical significance, the delayed context feedback condition was superior to all other conditions in reducing the incidence of repeated errors.

DISCUSSION

The results of this study clearly indicate that difference in verbal feedback can affect the quality of student performance during oral reading. The precise nature of the relationship between teacher feedback and student performance is complicated but the findings of this study point toward some valuable hypotheses useful in guiding future investigations.

The tendency for the lower ability readers in the immediate grapho-phonic condition to hesitate can be explained i part as "learned helplessness." That is, the readers come to recognize

TABLE 16

Percent of Repeated Errors on Second Encounter of Target Words as a Function of Feedback Form and Timing

	Form	Immediate	Delayed
Lower Ability	Terminal	53.33	53.54
	Sus. G.P.	59.67	55.33
	Sus. Con.	72.02	37.80
Higher Ability	Terminal	27.08	14.29
	Sus. G.P.	34.52	10.33
	Sus. Con.	14.76	8.33

that they will receive help soon if they just wait. There may also be a certain amount of error avoidance operating within this condition for the lower readers. By hesitating rather than mispronouncing they avoid having their own decoding efforts corrected immediately. In the delayed grapho-phonic condition these factors are not in force. The lower readers have time to apply the strategy communicated implicitly in the feedback and they mispronounce.

Lower ability readers in the immediate context condition respond with inflated mispronunciations over hesitations. One explanation for the willingness of this group to mispronounce may be that they recognize that with immediate feedback pending there is no time or way to utilize the context strategies implicit in the feedback. They have limited time to process and only the context up to the point of the miscue to work with in making an attempt. The option of mispronouncing is open to them because even if unsuccessful their effort will not be challenged by the context oriented prompt. The tendency for lower ability readers in the delayed context condition was to hesitate. As with the delayed grapho-phonic group it seems that these readers had sufficient time to apply the strategy implicit in the feedback offered. We hypothesize that these readers are using hesitations as thinking time or even for convert rereading. Timing seems to be the critical factor influencing the ability or the willingness of the lower readers to apply certain strategies. For the higher readers timing did not seem to be so crucial.

Delayed context shows up in two areas as a potentially valuable feedback strategy. Students reading in this condition were more successful than in any other in identifying their own miscues. Students in this group were also highly successful in identifying target words in their second encounter. Interestingly, the students in the immediate context condition were among the poorest in both these areas of performance.

The importance of timing of feedback showed its overall impact in the area identifying the target words on their second encounter. The effect of delaying feedback was salient across all forms of prompts for higher and lower readers alike.

Summary of Findings Related to Research Objectives

Objective 1:

To conduct an historical review of the literature on oral reading instruction in classroom and clinical settings.

Findings

1. There is a significant discrepancy between (a) the expressed views on the value of oral reading instruction in the professional literature (by-in-large negative) and (b) the amount (widespread) and type (round-robin) of oral reading instruction going on in classrooms.

2. Certain types of oral reading practice have the apparent potential to constitute significantly to growth in

reading ability. Specifically, teacher guided practice can develop (a) reading fluency through focus on the prosodic features of language and on units of language discourse larger than the word and (b) comprehension through the reduced cognitive attention to decoding and the emphasis on the reader's interpretation and communication of the author's intended message.

3. Effective practice in oral reading includes elements such as the following:

   A. The use of text which is rich in language in terms of rhythms, patterns, and quality of expression;
   B. The Modeling of appropriate oral reading by the teacher;
   C. The opportunity to rehearse text by students;
   D. The opportunity to perform orally in both individual and audience contexts;
   E. Sustaining/formative feedback by the teacher to the student's performance;
   F. Teacher guided analysis of text - in terms of language usage and author's intended meaning;
   G. An emphasis on oral reading which expresses the author's intended meaning.

4. The dominant use of "round-robin" type oral reading in schools today is a result of:

A. The need for an accountability/monitoring system on the part of teachers to check whether students are recognizing words and to insure that all students have been exposed to the content;

B. The stilted and controlled language of the basals which does not lend itself to interpretative or expressive reading;

C. The focus in reading instruction on the accurate pronunciation of the word as being the most important variable in learning to read.

Objective 2:

To study teacher beliefs, attitudes and practices in oral reading instruction. Findings

1. Teacher guided oral reading plays a prominent role in instruction at all levels of schooling - in particular at elementary levels.

2. The dominant pattern for guided oral reading instruction is turn-taking (or round-robin) reading within groups.

3. Most teachers view oral reading as valuable to all students and particularly so for the low achiever or slow learner.

4. The chief value of oral reading for the students is seen as helping them to improve their decoding skills.

5. The quality of oral reading is judged primarily in terms of accuracy of reading.

6. Approximately two-thirds of all reading group sessions in secondary grade classrooms involve oral reading instruction. Approximately two-thirds of the time in these sessions is focussed in interaction with the story being read. Approximately two-thirds of this interaction time is devoted to actual oral reading.

7. The average length of time spent in a typical reading group session is longer for the high achieving as opposed to the low achieving student.

8. The error rate for students in low achieving second grade groups typically is about double that of students in high achieving groups.

Objective 3:

To conduct and inventory a lot of student beliefs and attitudes toward oral reading instruction.

Findings

1. Even by the beginning of second grade, students have begun to develop identifiable beliefs and attitudes toward oral reading.

2. These developing beliefs and attitudes are different for the higher and lower achieving student.

3. The following points were identified as differentiating higher and lower achieving students' beliefs and attitudes:

A. The better the reader the greater the enjoyment of oral reading regardless of the social or preference context.

B. The better the reader the greater the desire for the teacher to assume a low profile in helping with difficult words.

C. The poorer the reader the less the enjoyment and the greater the desire for teacher involvement.

4. The variable "perceived ability in oral reading" relates (i.e., predicts) reading achievement much better than does "perceived ability in silent reading."

5. For extremely poor readers, oral reading is reviewed as a stressful and anxiety producing part of the classroom instructional routine.

Objective 4:

To construct a theoretical framework for understanding and studying the nature and role of teacher verbal feedback to student miscues occurring during instruction.

Findings

1. Teacher verbal feedback to miscues can best be understood as an on line/interactive decision-making process.

2. A teacher's decision=making matrix with respect to verbal feedback to miscues consist of specific criteria related to three dimensions:

A. Selection: Which miscues would be responded to?

B. Timing: When will miscues be responded to?

C. Form: How will miscues be responded to?

Objective 5:

To develop an observation system for recording the salient features of the teacher/pupil verbal interaction patterns surrounding student miscues.

Findings

1. The FORMAS taxonomy targets and operationally defines teacher/pupil interactive behavior surrounding miscues across the following areas:

I. Miscue (The observed response in relation to the expected response)
   A. Type: Insertions, omissions, hesitations, substitutions, mispronunciations, calls for help, repetitions
   B. Meaning Change: Little and substantial
   C. Grapho-Phonic Similarity: High and low

II. Reaction (student's first behavior following the miscue)
   A. Type: Repeated attempt, continuation, immediate self correction, pause, call for help, no opportunity

III. Teacher Verbal Feedback (First teacher behavior in response to a miscue)

   A. Type: No verbal, terminal (giving a text word or calling on another student) and sustaining (providing opportunity or helping the student to identify the text word)

   B. Form of Sustaining: Attending (Noncue focusing), grapho-phonic and contextual

   C. Timing of Teacher Feedback: Immediate (less than 3 seconds) and delayed (more than 3 seconds)

   D. Point of Feedback: Before the next sentence break, at the next sentence break, or following the next sentence break

IV. Other Student Verbal Feedback

   A. Type: None, solicited and unsolicited

   B. Timing: Immediate (less than 3 seconds) and delayed (more than 3 seconds)

   C. Form: Attending (Noncur focusing), Grapho-Phonic and Contextual

V. Resolution

   A. Type: Teacher identified text word, student identified text word, another student identified text word, or miscue left unidentified

2. The training manual (and accompanying audiotape) provides instruction in the use of the FORMAS taxonomy and specific procedures for estimating levels of inter-coder reliability.

Objective 6:

To study the characteristics of verbal feedback to student miscues as they relate to teacher background experience and teachers' theoretical orientations toward reading.

Findings

1. Overall, preservice and inservice teachers tend to be more similar than they are different in their response patterns to pupil miscues in dyadic settings.

2. On the average, the type of feedback offered to students - when offered - was almost equally divided between terminal (i.e., giving the word) and sustaining (i.e., helping the student) patterns. Inservice teachers were more likely than preservice teacher to resort to terminal feedback.

3. On the average, the form of sustaining feedback was fairly equally distributed for both postservice and inservice teachers among grapho-phonic, contextual, and attending prompts.

4. The only dimension of feedback to miscues found to be significantly related to teacher conceptions of reading was timing. Teachers with more whole language orientation tended to wait (i.e., delay) their responses to high meaning change miscues more so than teachers with a linear skills orientation.

5. The selection of terminal vs. sustaining feedback was explained by teachers most often in terms of reader abilities or behaviors and management concerns than as a function of conceptions about reading.

6. With respect to sustaining feedback the choice between grapho-phonic and contextual prompts was explained quite often in terms of teacher conceptions of reading.

Objective 7:

To study the characteristics of verbal feedback to miscues as they relate to pupil status variables (i.e., achievement, ethnicity, and sex) and miscue characteristics.

Findings

1. The types of miscues, their frequency, and their characteristics (in terms of degree of meaning change and grapho-phonic similarity to text words as well as reaction patterns) are significantly different for high and low ability readers.

2. The patterns of verbal feedback offered by teachers to miscues are significantly different as a function of miscue type, characteristics and reaction patterns.

   A. High meaning change miscues are responded to more often and more quickly than low meaning change miscues.

B. Certain types of miscues (i.e., hesitations, mispronunciations, and substitutions) are more likely to be responded to than other types of miscues (i.e., insertions, omissions, and repetitions)

3. The patterns of verbal feedback offered by teachers differ as a function of the ability level of the group on which the student is reading.

A. The miscues of students in high achieving groups are more likely to be ignored than those of students in low reading groups.

B. Teachers are more likely to delay their responses (when offered) to students in high achieving as opposed to students in low achieving groups.

C. Students in low achieving groups are more likely to be given terminal feedback than those in the high achieving groups.

4. No consistent differences or patterns were found in teacher verbal feedback related to pupil sex, ethnicity, or dialect features of miscues.

Objective 8:

To study the associated effects of teacher verbal feedback patterns on pupil reading strategies.

Findings

1. Certain teacher verbal feedback patterns show clear and strong predictive relationships independent of error rate and achievement levels to pupil reading miscue and reaction patterns:

   A. There is a positive relationship between hesitation miscues and terminal feedback.

   B. There is a positive relationship between delaying the point of feedback and continuation and immediate self-correction pupil behaviors following miscues.

2. Teacher/pupil interaction patterns appear to operate as distinct sub-routines depending on the reading ability of the group the teacher is working with.

   A. The reader in a high achieving group is one who makes few miscues. The miscues that are made are mainly substitutes which affect meaning only slightly and do not resemble the grapho-phonic characteristics of the text word. The reader is most likely to continue reading in the text without interruption from the teacher and without bothering to self-correct later on. The next most common pattern - likely associated with more "difficult" words - is for the good reader to mispronounce and then immediately self-correct or make repeated attempts at the word without teacher interruptions until the word is identified by the student.

B. The reader in a low achieving group is one who makes many miscues. The miscues are primarily substitutions which do resemble the grapho-phonic features of the text word and also substantially affect text meaning. In such instances the teacher is likely to come in almost immediately or after the student has paused briefly to give the correct word. The second most common pattern - like associated with more difficult words - is for the reader in the low achieving group to hesitate and all but wait for assistance which the teacher quickly obliges by giving the text word.

3. The small scale experimental studies conducted as part of this project suggest the following:

A. Variations in patterns of verbal feedback have a significant differential effect on high and low achieving students' success in identifying the same text word the next time it is encountered. Delayed contextual prompts seem to be the most effective type of prompt overall (with immediate context prompts being the worst). The effect for delaying feedback - whatever the form - was found to be significant for successfully identifying the target word on the next encounter with both high and low achieving student.

B. Grapho-phonic prompts were found to take longer and lead less often to student identification of the text word than contextual prompts.

Objective 9:

To study the long term effects of the context for oral reading instruction - including feedback characteristics - on pupil achievement levels.

Findings

1. Pupil error rate in assigned basal materials is negatively related to growth in reading achievement. In other words, the more difficult the material the student practices in - relative to his or her ability - the less the growth in reading achievement.

2. Teachers' use of terminal feedback to pupil miscues is negatively related to growth in reading achievement. In other words, the more often teachers employ terminal feedback the less will be the growth in reading achievement.

Instructional Implications

This research was for the most part descriptive and correlational in nature. What the patterns in the data reveal are strong bonds between pupil oral reading behaviors and teacher verbal feedback behaviors. These interactive patterns are logically reinforcing of one another and undoubtedly lead to stable behavioral routines. Further, the long term effects (in terms of reading achievement) associated with the stable routines are potentially debilitating to the less skilled reader. It is reasonable to assume these interactive routines will need to be broken if instruction is to have a positive impact on the less ksilled reader. Some of the ways - either alone or more likely in combination - in which these patterns might be broken are: (1) to adjust the task; (2) to teach pupils explicit strategies for dealing with miscues; and (3) to modify teacher verbal feedback behaviors.

Adjusting the task of oral reading can be approached in two ways. Initially, pupil error rate in practice materials can be carefully monitored and controlled. For reasons given earlier, the importance of this aspect of the task of oral reading can not be underestimated in terms of its immediate and long term effects on pupil reading behaviors. Further, the procedures for guiding oral reading (i.e., the management of the task) can be modified considerably. So called "round-robin" oral reading under teacher guidance from basals was the only method of oral reading instruction we saw evidence for in the classrooms studied. Our interviews with teachers revealed that they valued oral reading for specific purposes -- chiefly to foster the development and integration of decoding skills. The teachers expressed a value for silent reading but did not see it as a viable alternative to/nor appropriate substitute for oral reading. Unfortunately, the message teachers have received in teacher education programs and through the professional literature is that there is an essentially antagonistic relationship between silent and oral reading -- with silent reading being the preferred mode. In our unwillingness to consider the possibility that oral reading is also important and can contribute to growth in reading ability we may have missed the opportunity to promote promising practices in oral reading instruction--some of which have been lost in history, some of which have remained on the periphery of reading programs, and none of which remotely resemble "round-robin" reading (Hoffman, 1981; Hoffman and Segal, Note 7). Such effective practices could serve to minimize the social/evaluative context pressures associated with "round-robin" reading as well as to eliminate many of the management concerns related to pacing and activity flow.

A second point where a break in interactive routines might be made is through teaching students explicit behaviors for dealing with their own miscues. This relates to strategies associated primarily with the reaction cluster of the FORMAS taxonomy. The common behavior of the more skilled readers to continue reading in the text following a miscue suggests that this might be a worthwhile strategy to teach to less skilled readers. This would place the primary burden for monitoring of oral reading performance on the pupil - not on the teacher; and further give to the pupil the full linguistic context to use in any attempt at self-correction.

A third area in which routines might be broken is through changes in teacher verbal feedback behaviors themselves. These were hinted at earlier and can be summarized in terms of: (a) a high degree of tolerance (no verbal feedback) to miscues which do not substantially affect text meaning; (b) an extended wait time when miscues are to be responded to; and (c) sustaining as opposed to terminal response patterns. While this third area of adjusting feedback may appear to be the most direct point at which to break routines, it should be recognized that they will be difficult if not impossible to implement without changes in pupil behaviors achieved through adjustments to the oral reading task and/or the teaching of explicit strategies for dealing with miscues. The patterns in interaction surrounding learning tasks are there because they work effectively for the teacher given the context for instruction. To make permanent change in interaction patterns one must attend to the full network of teacher behaviors, pupil behaviors and task conditions.

Future Research

These instructional implications point first toward the need for more controlled research on effective oral reading instruction. Only in this manner can the validity of the prescriptions just offered be tested and subsequently refined. Second, the principal of adaption of interactive behaviors to insure smooth activity flow across learning tasks is also deserving of careful scrutiny. How quickly do interactive routines develop? How malleable are the routines to variations in task conditions? Does teacher behavior move to reflect "best instruction" beliefs as activity flow concerns are reduced? Finally, the results of this study suggest some way in which teacher/pupil interaction patterns surrounding other types of learning tasks might be approached to take into account the complexities of instruction under typical classroom conditions. In studies of teacher questioning, for example, this might take us beyond simple categorizations of question types and comparisons across ability groups to consider contingencies between question-answer-feedback behaviors and the characteristics of the learning task under consideration.

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